

Article

Principles of Sustainable Management of Energy Companies: The Case of Poland

Elżbieta Jędrych¹, Dariusz Klimek^{2,*}  and Agnieszka Rzepka³

¹ Faculty of Business and International Relations, Vistula University, 02-787 Warsaw, Poland; e.jedrych@vistula.edu.pl

² Faculty of Management and Production Engineering, Lodz University of Technology, 90-924 Lodz, Poland

³ Faculty of Management, Lublin University of Technology, 20-618 Lublin, Poland; a.rzepka@pollub.pl

* Correspondence: dariusz.klimek@p.lodz.pl

Abstract: In 2016, a law was introduced in Poland that required management bodies of energy companies owned by the state and a municipality to adopt management goals. The remuneration of the board members of these companies depended on the extent to which these goals were implemented. The challenge was that profit became an end in itself. The purpose of this article is to describe the process used to set up strategic goals on the basis of balancing capital within energy companies, which demonstrates a positive impact on the effectiveness of these companies. The solution proposed in this article is an alternative to using profit as the sole measure. The article consists of three parts. The first part is a review of the literature on management goals and how they relate to various economic measures—the main conclusions of this literature review were that, despite many attempts, we were not able to (1) clearly define the purpose of a company and (2) find an indisputable measure of the degree to which such goals were implemented in a firm that would be an alternative to using the outdated profit as a goal. The second part dealt with the results of a study on the formulation of management goals in 2017–2020, which was conducted on more than 150 energy companies. Based on this analysis, it was found that financial goals were gradually replaced by material (investment) goals, but this process was very slow. The final part of the article is our proposal for a new approach to formulating management goals in energy companies, linking them to tools that measure both the efficiency of capital deployment and the introduction of new rules for sustainable capital management in these companies.

Keywords: energy; energy companies; sustainable management; management goals; efficiency



Citation: Jędrych, E.; Klimek, D.; Rzepka, A. Principles of Sustainable Management of Energy Companies: The Case of Poland. *Energies* **2021**, *14*, 2042. <https://doi.org/10.3390/en14082042>

Academic Editor:
Radoslaw Miskiewicz

Received: 24 March 2021
Accepted: 4 April 2021
Published: 7 April 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

One of the questions that scholars and managers were asking for at least a few dozen years concerns the purpose of a business [1–3]. Although many tried to provide a meaningful answer over the years, this problem unfortunately remained one of the fundamental problems in economics. The question was not considered problematic as long as the neoclassical model of a private firm dominated, i.e., until about the middle of the 20th century. The neoclassical model assumes that people are always guided by the need to maximize utility when making economic decisions—so it is natural for any entrepreneur to seek to maximize profit. Therefore, for many years, profit was an unquestioned target and also the basic economic measure.

The problem was that a modern business that makes a profit is not necessarily an effective business. Profit is no longer the sole objective, as we live in a time when more attention is being paid to limited natural resources and the environment friendliness of brands, and there is a growing awareness of the importance of intellectual capital in the development of businesses. In recent years in particular, views that question profit maximization as the goal of modern business emerged repeatedly [4–6]. However, it is still widely used as a fundamental economic measure.

The hitherto unsolved problem of goals and measuring instruments arose in the theory and practice of economics for several reasons:

- To draw attention to the fact that the goals of a company do not necessarily coincide with the goals of the managers who run those companies.
- The emergence of environmental movements calling for the rejection of the “industrial system”.
- The development of scientific theory on intellectual capital.

All of these reasons occurred over the course of several decades of the second half of the 20th century. The first one concerned the effects of the separation of business ownership and management. This problem was first raised in 1932 by Berle and Means, who emphasized that whenever the function of ownership is separated from management, the problem of discrepancies between the interests of owners and management arises [7]. The assumption of a divorce of management and ownership meant that managers maximize their own differently-defined goals in conjunction to a simultaneous fulfilment of the condition that a minimum level of profit acceptable by the owners is attained. The authors of these concepts assumed that there is a conflict of economic interests between the managers and owners of capital in modern companies.

The problem of the purpose of a business and the purpose of its management frequently appear in the behavioral theories that began to develop in the 1950s. However, papers criticizing the neoclassical theory started to appear as early as the 1920s and 1930s. In 1955, an article on a behavioral model of rational choice was published by H. -A. Simon—one of the leading behaviorists [8]. Simon made a significant contribution to changing the understanding of the concept of rationality of human action—a transition from the idea of a person with unlimited computational capacity who, given a choice, takes into account all available values and maximizes expected utility, to the idea of making an alternative decision that is “good enough” according to some predetermined criterion. When it comes to economic organizations, Simon postulated that they strive for solutions that presuppose satisficing rather than maximizing, in other words, solutions that are “good enough”, but not the best. It seems that although rational choice theory was developed by Simon [9–11] and other behaviorists such as R.M. Cyert and J.-G. March [12], his theory and work only began to be more widely appreciated after he was awarded the Sveriges Riksbank Prize in Economic Sciences, in memory of Alfred Nobel in 1978. The behaviorists focused on the determinants of goal formation. They noted that managers have different goals depending on the area of responsibility and organizational level associated with their position—a production manager might have different goals for inventory than a finance manager. Ordinary employees place more value on their compensation, while customers place more value on the price and quality of the products they buy. Historically, such differences in goals were also evident during the period when the separation of ownership from capital began. Eventually, however, these goals were to be balanced by certain compensatory instruments such as public tenders, coalitions, and information manipulation. The researchers also refer to “cumulative goals” as an effect of compromise between different groups of internal stakeholders [13–19]. It should be added that similar views formed the basis for modeling managers’ competencies [20].

There are several theories of purpose of a company, some of which are based on empirical research. Three of which deserve attention:

- The theory of Growth Maximization as the ultimate goal of a firm and the model proposed by E.T. Penrose and R. Marris [21–26] to maximize the rate of growth. The authors of this theory argued that there are two constraints in this regard; the first is the available human resources, the second is the willingness of managers to provide financial security in terms of employment. Penrose pointed out that a rapid pace of business development can lead to reduced managerial efficiency and can therefore be an important factor limiting a firm’s growth rate. Koutsoyiannis drew attention to the fact that the profit of a company that maximizes the growth rate is lower than the profit of a company that optimizes the profit. This is because in the case of the former,

- the selected factors of production are remunerated by the firm beyond their marginal productivity [27].
- W.J. Baumol's sales or revenue maximization theory [28,29]. According to its author, higher revenues give managers the satisfaction and prestige associated with running a firm with a significant market share. Executive pay and other fringe benefits (e.g., luxurious cars, private medical care) often depend on the degree of sales growth. Although this model is an alternative to the Growth Maximization theory, similar to the previous and subsequent models, sales maximization requires the simultaneous realization of a minimum level of profits accepted by shareholders [30].
 - Williamson's model of the mechanisms for discretionary decision-making by managers [31–33]. The cornerstone of this theory is that the primary goal of top managers is to maximize their own utility and, to a lesser extent, to maximize the utility of shareholders. The utility function of managers includes high monetary compensation, wide discretionary power, social recognition of the importance of their work, the prestige associated with power over employees, and job security. Satisfaction also comes from luxurious company cars, well-equipped offices and various representation expenses. However as mentioned in previous theories, the manager's utility function thus formulated is performed while there is a minimum profit constraint. Managers who achieve the minimum profit constraint perceive this as a personal achievement and a measure of the managers' success in running the company [31,34].

Another reason to draw attention to the purpose of a company was the development of the movements for environmental protection and the rational use of natural resources in the early 1970s, which aimed to improve the quality of life (unpolluted air and water, healthy food). The environmental movements called for the rejection of the "industrial system" and the creation of an alternative system. They were based on the following beliefs—humans and society are part of nature and must act in harmony with it; the concept of economic growth should be replaced by the concept of sustainable development (a production model based on renewable energy sources and renouncing coal and nuclear power), taking into account the ecological and socio-cultural characteristics of different geographical regions in the short- and long—term; the existing centralization and bureaucratic structures should be replaced by decentralized, direct democracy; and violence should be rejected as a political measure. Closely related to the development of ecological movements is the concept of corporate social responsibility, which is understood to be, responsible action by companies in the social, economic and natural spheres [35–37]. According to this concept, companies ought to take social interests and environmental factors into account since the beginning of their existence, and relations with various stakeholder groups should have a significant influence on corporate goals.

The third reason that changed the approach to the purpose of a business was the development of knowledge about the capital (resources) of a company. The development of knowledge about resources, equilibrium, and intellectual capital made a significant contribution in this regard. The concept of sustainable management of enterprise capital formulated on the basis of these methods is discussed in the third part of the article, as an alternative for energy companies not only in terms of setting management goals, but as a new approach to the management process.

The first theories and methods came from the systemic approach that emerged and was developed in the 1950s and 1960s. This approach treats the objects under study as a collection of interrelated elements in such a way that they form a new whole that stands out in a given environment. The systemic approach to analyzing organizations requires that they be treated as a compact structure with multiple inputs and outputs. Within this structure, there are smaller elements (subsystems) that enable the processing of inputs into outputs according to the goals of the system. Thus, an organization is treated as a relatively isolated system that seeks to maintain its internal and external autonomy on the one hand, and integrity with the environment and strengthening of its position among similar organizations on the other. The consequence is that the so-called sub-optimization

in the system can not only improve the functioning of the whole, but (in some cases) can worsen the functioning of the whole, and the nature and strength of the relationships between the elements determine the strengthening or weakening of interaction.

The aforementioned approach corresponds directly with the resource and competence approach, which assumes that the strength of a company results primarily from the knowledge of its people and its technological potential. E.T. Penrose's resource-based approach asserts that the growth of a firm is the result of two key mechanisms—managerial capacity to process information and the perception of managers to find new uses for surplus resources [38]. Penrose suggested that there is a close relationship between different types of resources, ideas, experience and knowledge of the manager, that the growth of a firm could be studied as a dynamic interaction process between management and resources, and that the benefits brought by material resources depend on the knowledge possessed by human resources. Of particular relevance to the concept presented in this article are Penrose's statements about the imbalance between resources and the consequences of this imbalance—Penrose argued that a firm, understood as a collection of resources, operates under conditions of constant imbalance. A surplus of specific resources is the creative engine for a firm's growth, innovation, and profit. However, if the firm grows faster than the managerial experience, operational efficiency and labor productivity will suffer [39].

However, the most important theory that is essential to the emergence of the concept of sustainable management is the theory of intellectual capital [40–45]. This theory is important because it shows that business is not just about buildings, machinery, or money. It helps to understand what capitals (resources) make up the company, and at the same time allows to organize the totality of capitals that make up the company and to formulate the principles of sustainable management, in which the goal of a company is a balanced development of capital and not profit [46,47].

Every one of these theories leads to securing the right capital mix in a company. The literature shows that the balancing of capitals (resources) should occur along the following lines:

1. Reducing the distance between the actual and ideal values of each of the six capitals at any moment;
2. Aligning the six capitals of the company.

The research, formulas, and schemas presented below refer primarily to issue 1. It is still being researched how capitals interact in the management process. In practice, managing a company would require striving to achieve specific goals while also maintaining a balance between the company's capitals, i.e. reaching an optimal level of each capital in relation to the other. Section 4 presents more details on this approach.

Since it is usually associated with environmental and social responsibility, it is also important to mention that the term sustainable management refers primarily to balancing a company's capitals. Balancing capitals encompasses both these aspects, but it has a primarily economic dimension.

2. Research Methodology

Our research consisted of an analysis of management goals set by the shareholders of energy companies in Poland. These goals are publicly and freely available on the Internet, despite the fact that not all companies include them as a part of their resolutions. Since such goals are included in the resolutions from general meetings of shareholders, it is a requirement that large energy companies that list their shares on the Warsaw S.A. Stock Exchange publish their goals. In order to analyse them, we:

1. selected available resolutions that included management objectives;
2. divided the goals into four categories: financial, investment, market-related, and other (quality, safety, and CSR);
3. analysed the structure of the goals and their evolution over the years.

The obligation to set management goals in companies owned by the State Treasury and companies owned by municipalities was introduced in Poland in 2016 [48]. According to the then Ministry of Privatization, at the end of 2015 there were more than 400 companies owned by the State Treasury and more than 2600 companies with participation of municipalities in Poland. The provisions of the Act affected all main companies in the energy sector in Poland (PGE Polska Grupa Energetyczna S.A., ENEA S.A., TAURON Polska Energia S.A., ENERGA S.A.), gaseous fuel companies (PGNiG S.A.), liquid fuel companies (Polski Koncern Naftowy ORLEN S.A., Grupa Lotos S.A.), subsidiaries operating in the above capital groups, as well as most of the 180 heat companies with participation of municipalities, which were engaged in production, transmission, distribution, and trading of heat.

The main reason for the introduction of management goals in these companies was the intention to standardize the principles of monetary remuneration of the management board members in these companies, which depended primarily on the results of the company's performance and the size of the company. The rationale to the act of 9 June 2016 on the principles of determining the remuneration of persons managing certain companies states that the purpose behind the introduction of the new rules for determining remuneration is to improve the quality of management through such measures as making the variable part of the remuneration dependent on the achievement of the established management objectives. In addition, according to its authors, the law should strike the right balance between the need to create a flexible mechanism for determining this remuneration, as well as to bring it in line with market trends, and the need to fully implement the principle of social justice [49]. However, the literature points out that the real reason for the introduction of management goals was probably an incident in one of the largest energy companies in Poland, a few months before the adoption of the Act. The incident involved the dismissal of a board member after a very short time in his position. Despite this fact, the board member received a disproportionately high severance payment, in accordance with his employment contract. The case received a great deal of media and political attention and was commented on negatively [50].

The provisions of the Act assume that the total remuneration of a member of the management board consists of (1) a fixed part constituting a basic monthly remuneration and (2) a variable part constituting a supplementary remuneration for the company's financial year. The fixed remuneration of the President of the Management Board is determined according to the size of the company, in particular, the value of its assets, revenue, and employment (Table 1). The amount of remuneration increases annually in the amount bracket from 7 to 15 times of the average monthly remuneration in the business sector exclusive of bonuses paid out of the net profit in the fourth quarter of the previous year, announced by the President of the Central Statistical Office. The variable remuneration depends on the level of Managerial Objectives realization and might not exceed 100% of the Fixed Remuneration.

Table 1. Fixed remuneration of management board members.

Annual Income (in €)	Total Assets (in €)	Number of Employees	Monthly Remuneration (in €) *
≥2,000,000	≥2,000,000	≥10	1300–3800
<2,000,000	<2,000,000	<10	2500–5100
<10,000,000	<10,000,000	<50	3800–6400
<50,000,000	<50,000,000	<250	5100–10,200
<250,000,000	<250,000,000	<1250	8900–19,100

Source: Act of 9 June 2016 on the principles of determining the remuneration of persons managing certain companies [48]. * in 2020, rounded, assuming the average monthly salary in the business sector exclusive of bonuses paid out of the net profit in the fourth quarter of the previous year, announced by the President of the Central Statistical Office (in the fourth quarter of 2019—PLN 5655.43) and the average EUR exchange rate in 2020, according to the National Bank of Poland (PLN 4.4452).

The study described in this article involved collecting information on management goals from companies owned by the State Treasury and municipalities. The method used for this purpose was a review of the available resolutions of general meetings of shareholders of energy companies in 2016–2020, which included the management goals of those companies. Such a review proved to be problematic in the case of subsidiaries of large capital groups, some of which had merged with or were acquired by other companies in the energy sector in recent years. This resulted in a different number of companies in the subsequent years, due to the fact that some of the companies that had their very own specific management goals suddenly became branches of a larger group of companies or holding structures. When it comes to energy companies that were owned by a municipality, it could be observed that in the early years, after the above-mentioned Act was passed (2017–2018), such companies would publish their goals online but would later delete them or only provide broadly-defined goals, and transfer this responsibility to the supervisory board. In the case of limited availability of management goals, other sources of information were used, such as managers of small and medium enterprises and MBA students, who provided information on the goals of a total of 154 firms, and 155, 135, and 126 companies in the following years.

3. Management Goals for 2016–2020 in Energy Companies—Study Results and Conclusions

All management goals in the energy companies studied could be classified into four groups—financial, investment, market-related, and one that concerns management, quality, safety, and CSR (see Table 2). In addition to the fact that the goals were divided into four groups, the energy companies were divided into two groups—large public companies and dependent enterprises of different sizes, and often smaller municipal enterprises that were involved in the production and distribution of thermal energy in cities.

Table 2. Summary of management goals in selected groups in energy companies (in 2016–2020 in Poland).

	Total Number of Goals in All Enterprises				Number of Goals in Individual Enterprise			
	2017	2018	2019	2020	2017	2018	2019	2020
TOTAL NUMBER OF ENTERPRISES	154	155	135	126	154	155	135	126
Public companies and subsidiaries	38	38	28	27	38	38	28	27
Smaller urban heat plants	116	117	107	99	116	117	107	99
MANAGEMENT goals GROUPS	1046	1038	848	749	6.8	6.7	6.3	5.9
financial	301	300	219	189	2.0	1.9	1.6	1.5
investment	205	205	192	184	1.3	1.3	1.4	1.5
market-related	197	197	159	144	1.3	1.3	1.2	1.1
management, quality, safety and CSR	343	336	278	232	2.2	2.2	2.1	1.8

Source: own research.

The results of the study showed that in subsequent years, the number of management goals decreased from 6.8 in a single energy company in 2017 to 5.9 in 2020. The lowest number of management goals among the energy companies surveyed was 3, while the highest was 14. The most common were one or two goals of a financial and investment nature, one market-related goal, and two objectives related to management, quality, safety,

and CSR. There were no particular differences in this respect between large capital groups of energy companies (electricity, fuel, gas) and smaller municipal companies (heat energy). In the subsidiaries of large capital groups, on the other hand, the formulated management objectives were similar to those of the parent company. There was also a gradual shift away from the formulation of financial, market, and management, quality, safety, and CSR objectives, in favor of an increasing number of investment goals. However, this did not have a fundamental impact on the structure of the goals. However, the number of goals is not very meaningful for the conclusions, which is why a detailed analysis of the target structure in individual groups was carried out (see Table 3).

Table 3. List of management goals in Polish energy companies for 2016—2020.

Type of Management Goals	2017		2018		2019		2020	
	Goal	%	Goal	%	Goal	%	Goal	%
FINANCIAL	301	195.5	300	193.5	219	162.2	189	150.0
obtaining/increasing net profit	110	71.4	111	71.6	80	59.3	70	55.6
improving the level of other economic indicators apart from profit	77	50.0	79	51.0	57	42.2	50	39.7
obtaining/increasing EBIT, EBITA, EBITDA	42	27.3	42	27.1	30	22.2	29	23.0
lowering costs	35	22.7	33	21.3	27	20.0	20	15.9
debt reduction	25	16.2	24	15.5	18	13.3	15	11.9
other financial goals	12	7.8	11	7.1	7	5.2	5	4.0
INVESTMENT	205	133.1	205	132.3	192	142.2	184	146.0
implementing specific investments/projects	98	63.6	99	63.9	108	80.0	105	83.3
increasing/optimising investment	46	29.9	45	29.0	31	23.0	29	23.0
increasing investments in renewable energy	31	20.1	30	19.4	30	22.2	28	22.2
increasing expenditure on research and development	20	13.0	20	12.9	14	10.4	14	11.1
other investment goals	10	6.5	11	7.1	9	6.7	8	6.3
MARKET-RELATED	197	127.9	197	127.1	159	117.8	144	114.3
sales growth/increasing revenue/attracting new customers	120	77.9	121	78.1	101	74.8	95	75.4
improving the quality of customer service	55	35.7	54	34.8	40	29.6	34	27.0
building a brand/product/company image/company position on the market	16	10.4	16	10.3	13	9.6	11	8.7
other investment goals	6	3.9	6	3.9	5	3.7	4	3.2
MANAGEMENT, QUALITY, SAFETY, CSR	343	222.7	336	216.8	278	205.9	232	184.1
implementation of plans/tasks	119	77.3	119	76.8	103	76.3	94	74.6
reducing the accident rate	44	28.6	44	28.4	37	27.4	30	23.8
implementing the company's strategy	40	26.0	39	25.2	24	17.8	17	13.5

Table 3. Cont.

Type of Management Goals	2017		2018		2019		2020	
	Goal	%	Goal	%	Goal	%	Goal	%
optimization/restructuring the organization	27	17.5	24	15.5	20	14.8	11	8.7
acquiring and implementing innovations	26	16.9	25	16.1	19	14.1	17	13.5
increasing employee engagement	26	16.9	26	16.8	30	22.2	23	18.3
implementing personnel policy	24	15.6	22	14.2	19	14.1	17	13.5
increasing social and sponsoring activities	19	12.3	18	11.6	11	8.1	10	7.9
other management, quality, safety and CSR goals	18	11.7	19	12.3	15	11.1	13	10.3

Source: own research.

The detailed list of management goals in Polish energy companies in 2016–2020 presented above showed the following.

1. As for financial goals, the largest decrease can be found in net profit. Net profit was targeted mainly in municipal heating companies, while in large energy companies (electricity, fuel, and gas) profit was calculated in the form of EBIT, EBITA, and EBITDA. Such profit remained the goal of management in the following years, however, in some companies, net profit turned into EBIT or EBITDA. The goal of acquiring external financing, which was to be used primarily for investments, was also found in some companies alongside other financial goals.
2. Investment goals were the only group in which the number of goals increased. These goals were mainly related to the implementation of investment projects that were not clearly formulated or, although less frequently, to clearly defined and named projects (especially in larger companies). It is noteworthy that the number of RES goals increased slightly in individual years, while the number of R&D expenditure goals decreased.
3. Among the market-related goals, increasing sales revenue was mentioned most frequently, while other goals included attracting new customers. Relatively frequently, attention was paid to improving the quality of customer service (in about 1/3 of the companies) and building a brand or company image, but this only applied to larger companies.
4. The group of goals that included management, quality, safety, and CSR objectives was the most diverse. Most often these goals related to the implementation of the adopted material and financial plan, and for some companies, the implementation of a strategy was most important. Almost half of the smaller companies operating in the local market mentioned improving the quality of customer service as a goal, although these goals became less frequent over time.
5. Despite ongoing mergers and acquisitions, none of the objectives in the companies studied related to these processes.

Tables 4–6 show a selection of management objectives of the three largest industry-leading energy companies in Poland—Polski Koncern Naftowy Orlen S.A. (in the fuel sector), PGE Polska Grupa Energetyczna S.A. (in the energy sector), and Polskie Górnictwo Naftowe i Gazownictwo S.A. (in the gas sector).

Table 4. Management goals of PKN Orlen S.A. for 2017–2019 and the following years.

Management goals for 2019
<ul style="list-style-type: none"> (a) Increasing business efficiency indicators. (b) Improvement of cost efficiency in the ORLEN Capital Group. (c) Implementation of strategic projects in accordance with the adopted budget and investment schedule in the ORLEN Capital Group. (d) Implementation of the company's long-term strategy to secure the supply, procurement and storage of energy (fuel, electricity, and heat), which included, in particular, activities related to access to crude oil reserves (upstream) and diversification of the purchasing portfolio. (e) Increasing the company's TSR (Total Shareholder Return) ratio. (f) Reducing the company's TRR accident rate. (g) Developing the project portfolio and increasing expenditure on research, development and innovation.
Management goals for 2018
<ul style="list-style-type: none"> (a) Increasing the company's efficiency ratios. (b) Increasing investment in research, development and innovation. (c) Optimizing expenditure on maintenance investments, overheads and personnel costs. (d) Increasing PKN ORLEN S.A.'s Total Shareholder Return ratio. (e) Reducing of the company's TRR accident rate (Total Recordable Rate). (f) Implementation of the company's long-term strategy to secure the supply, procurement and storage of energy (fuel, electricity, and heat), which included, in particular, activities related to access to crude oil reserves (upstream) and diversification of the purchasing portfolio. (g) Implementation of the company's investment activities to generate revenue from alternative fuels (including activities related to electricity generation). (h) Operationalization of the action plan for acquiring, developing and implementing innovation.
Management goals for 2017
<ul style="list-style-type: none"> (a) Increasing the company's EBIT. (b) Increasing the company's EBITDA. (c) Increasing the company's development capital expenditure. (d) Optimizing expenditure on maintenance investments, overheads and personnel costs. (e) Increasing the company's TRS ratio. (f) Reducing the Group's debt ratio. (g) Reducing the company's TRR accident rate. (h) Implementation of the company's long-term strategy to secure the supply, procurement and storage of energy (fuel, electricity, and heat), which included, in particular, activities related to access to crude oil reserves (upstream) and diversification of the purchasing portfolio. (i) Determining of the alternative fuel revenue stream, preparation and commencement of the implementation of the company's investment activities in this area (including activities related to electricity generation). (j) Preparation of an action plan for the acquisition, development, and implementation of innovation.

Source: on the basis of [51,52].

Table 5. Management goals of PGE Polska Grupa Energetyczna S.A. for 2017–2020.

Management goals for 2020	
(a)	Reaching the EBITDA ratio specified in the approved financial and physical plan for the financial year for the Capital Group.
(b)	Meeting covenants resulting from loan agreements (Net debt/EBITDA)—ratio (net debt/EBITDA).
(c)	Time availability rate of the selected production units of the Capital Group.
(d)	Implementing specific projects and strategic investment programs.
(e)	Adapting to structural changes in the sector through the implementation of strategic programs and projects other than those mentioned in (d).
(f)	Effective use of the company's innovation potential.
(g)	Building a systemic approach to communication in the PGE Group.
Management goals for 2017	
(a)	Reaching the EBITDA ratio specified in the approved financial and physical plan for the financial year for the Capital Group.
(b)	Meeting covenants resulting from loan agreements (Net debt/EBITDA)—ratio (net debt/EBITDA).
(c)	Time availability indicator (CDGU) of the PGE Górnictwo i Energetyka Konwencjonalna S.A. power plant.
(d)	Implementation of specific milestones for the Mega-investments of PGE Górnictwo i Energetyka Konwencjonalna S.A.(Opole, Turów)—valid until the completion of the Mega investment.
(e)	Improving quality indicators for customer service (e.g., customer non-invoicing/invoicing rate), effective customer experience management, constant increase in sales of new products (sale of energy-containing products and synergistic products for electricity and gas).
(f)	Adapting to structural changes in the sector (introduction of a process-task structure, and correspondence technical support system).
(g)	Building a structural approach to marketing, product and process innovation, financing research, development, pilot studies and implementations, and creating an ecosystem for innovation in the PGE Group taking into account the effective use of funds allocated for this purpose.
(h)	Creating a structured approach to brand building, product marketing, and sponsorship of culture, sports and social activities.

Source: own elaboration on the basis of [53–56].

With regards to management goals in PKN Orlen S.A., although these changed twice since 2017, the 2021 goals are the same as the ones in 2019. These were formulated to include at least one target from each of the categories presented in the table. In 2018, EBIT and EBITDA were replaced by a package of performance indicators. The problem with this was that while it increased management flexibility, it also allowed the board to specify whichever indicators were best at the time of assessing company performance. Attention among goals was also attracted by TSR (Total Shareholder Return), which is a measure of the total return that shareholders receive from the shares of a particular company over time (e.g., annually). This ratio expresses the sum of the return resulting from the change in the company's stock prices and dividends paid to shareholders during the period that the investor owned shares relative to the value of those shares at the beginning of a given year; this is expressed as a percentage on an annual basis. This ratio applies only to listed companies, so it was very rare in the energy companies studied, which are mostly small municipal heat and power plants.

The way the goals were formulated in the four largest electricity producers (PGE Polska Grupa Energetyczna S.A., TAURON Polska Energia S.A., ENERGA S.A., ENEA S.A.) was similar. It could be assumed that these companies modeled their goals on the company that published them first. This group of companies also had efficiency-specific goals, such as the time availability rate of selected production units. In each of the four

companies, market objectives (e.g., becoming a leading electricity supplier, creating a structural approach to building the company brand and product marketing, maintaining the company's rating, and selling new products) were considered important. Table 5 presents the objectives of PGE Polska Grupa Energetyczna S.A.

Table 6. Management goals of Polskie Górnictwo Naftowe i Gazownictwo S.A.

2020 Resolution	
(1)	Achieving consolidated EBITDA results for PGNiG Group.
(2)	Number of new customers.
(3)	Implementing the PGNiG Group's strategy.
(4)	Timely implementation of investment projects.
(5)	Annual restoration of domestic natural gas and crude oil resources.
(6)	Environmental protection and corporate social responsibility activities.
(7)	Other goals important to the PGNiG Group in a given fiscal year.
2016 Resolution	
(1)	Achieving consolidated EBITDA result for the PGNiG Group.
(2)	Number of new customers.
(3)	Implementation of PGNiG Group strategy.
(4)	Timely implementation of investment projects.
(5)	Annual restoration of domestic natural gas and oil resources.

Source: on the basis of [57,58].

Among all management goals of Polskie Górnictwo Naftowe i Gazownictwo S.A., there is one goal that occurred only once among the 155 companies studied, namely the annual restoration of national natural gas and oil resources. The other objectives did not differ significantly from those of other companies, although we see a high degree of possible flexibility in the "other objectives relevant to GK PGNiG in a given financial year". This meant that the Board should refine its goals from year to year.

The analysis of the management objectives of the 155 energy companies studied allowed us to formulate some general conclusions. Unfortunately, some of them were negative.

1. Profit is the dominant goal, and it is calculated and formulated in many ways. The basic question that people who formulate management goals should ask is whether profit is intended to be the goal or a measure of the degree to which the goal was achieved. To claim that profit is the goal is to return to neoclassical economic theory. The problem is that a dozen or so years ago business schools were still teaching that profit is the goal, while the idea of not accepting any measure other than profit persisted among managers for many decades. Another factor was that there are no universally accepted alternative economic measures to profit.
2. The problem is that profit is not a measure that optimizes the use of the firm's resources (capital). The same level of profit could be achieved in a company in many different ways [59]. The pursuit of profit at any cost can mean the waste of resources—not only natural, but also human and social resources. Profit could also be used instrumentally. Many energy companies operating as municipal enterprises have features of public utilities, especially where municipalities are the shareholders (in continental Europe). If profit is their goal, these companies must be careful that it is not too high, because the managers of these companies could be accused of charging too high a price for their services. Additionally, profit must not be too low because that could be a sign of poor management. Many researchers use the term "profit manipulation" to describe such phenomena [60].
3. The third conclusion also concerned profit. It was unclear whether profit was generated by the firm (as a result of the work of management and employees) or by other internal or external conditions. It might be that the management and employees

worked very efficiently, but the company did not generate profit due to various conditions. Conversely, there were also cases where the company made a profit (at least in the short run) even though management did little or nothing at all, or even made mistakes. Therefore, profit as a category could not be the basis for judging board performance, or at least it could not be the only measure. Profit itself, as a measure for assessing the condition of the company, could mislead and lull the vigilance of managers and shareholders. A situation might arise where a profit was generated, but the firm had no liquidity or had excessive debt, whose amount exceeded the financial capacity to repay it. Therefore, in practical financial analysis, it is necessary to use at least a few or a dozen different indicators, and such calculations must be carried out repeatedly in certain periods, to answer the question of whether the situation is improving or deteriorating. It should be added that in recent decades there were many attempts to replace profit with other measures. Among the best known attempts were added value (similar to profit) and the internal rate of return [61,62]. While the added value existed only at the level of an economic concept, the internal rate of return, based on the discount rate, spread throughout the world as a method of evaluating the profitability of a given decision, especially for investments, including projects in the energy sector [63].

4. One of the weaknesses associated with introducing management goals in energy companies was that some of the goals were incompatible with others. This presented managers with complex choices, none of which was good enough. Such incompatibilities took place not only among economic and social goals, but also among economic goals. Increasing a company's revenue could be done in two ways—first, by increasing tariffs (prices) for energy or fuel (which increased profits), but such a move would not be welcomed by society. Secondly, by investing in new connection points in low and sparse development. This will would increase revenue but would also increase costs and reduce profits.
5. There is another limitation related to the previous point. The analysis of the structure of the management goals allowed us to say that the variable remuneration of board members would never be paid in full. This followed from the assumed principle underlying the calculation of such remuneration. The amount of variable remuneration was calculated using the following formula: $VN = (G1 * A1 + G2 * A2 + G3 * A3 + \dots + Gn * Sn) * VNBA$ (VN—variable remuneration; VNBA—base amount of variable remuneration equal to ... % of the sum of fixed remuneration in the previous financial year; G1, G2, G3, ... , Gn—weight of individual goals from 1 to n in %; A1, A2, A3, ... , An—degree of achievement of individual goals from 1 to n in % (from 0 to 100%). Unfortunately, as some of the goals were mutually exclusive, the level of variable remuneration was only theoretical.
6. It was probably a mistake of the legislators to introduce provisions on the measurability of management goals in the Act. In the case of municipal enterprises involved in the production and distribution of energy, this resulted in the elimination of social goals from management goals (social goals were realized by municipal enterprises that had a public utility status for the benefit of residents and entrepreneurs operating in the region where the company operated). The fact that economic goals (especially profit) dominated among management goals at the expense of social goals made these companies similar to those that operated solely on a commercial basis. Although some of the shareholder resolutions included objectives such as increasing employee engagement or implementing adequate human resources policies, companies did not always know how to measure employee engagement so that such an objective had a measurable character. As a result, the boards circumvented these goals by assigning them zero weight. Whenever numbers were multiplied by zero, the result was zero. In practice, this eliminated goals that were not measurable.

4. Discussion

The conclusions that could be drawn from the study showed that one of the fundamental problems was the lack of alternative measures that could be substitute for profit. Finding such an alternative measure is particularly important at this time of great challenge for the industry [64–66].

Since this is an issue for discussion, we would like to present our proposal for a new approach to management goals, which combines them with new measures that provide an alternative to using profit as the sole objective. The new approach would introduce principles of sustainable capital management into the management process, leaving profit and the existing accounting system almost exclusively for tax purposes. We explored the concept of sustainable management in past papers, but modified it for the needs of energy companies [46,47].

The basic principles of sustainable management of the company's capital (Figure 1) would be as follows:

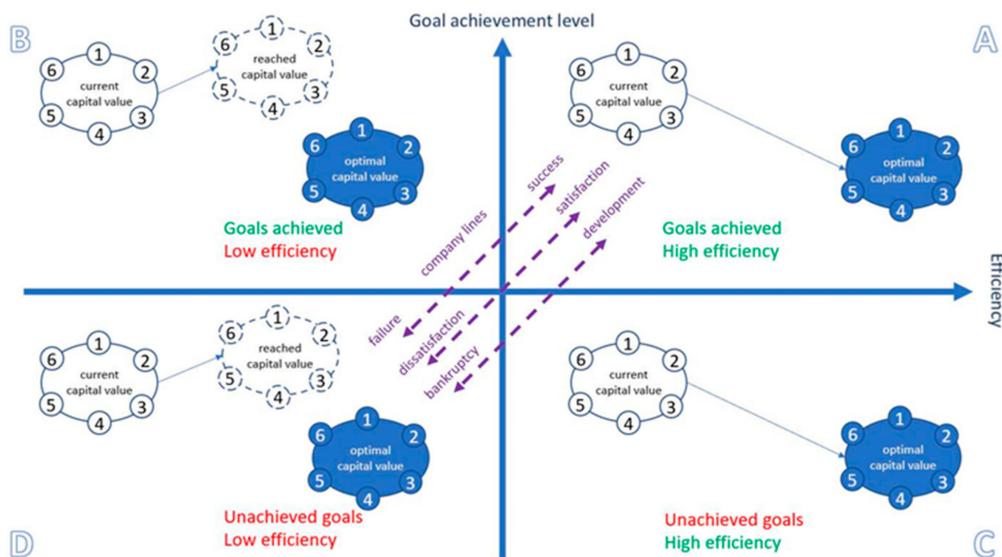


Figure 1. Illustration of the principles of sustainable management of a company's capital.

1. The primary task of a company is to achieve the strategic and operational goals with the greatest possible efficiency, which is understood to be striving for a point of equilibrium. In other words, as a company pursues a goal or goals, it should be effective while seeking a balance between different forms of capital (physical, structural, financial, market, human, and social), i.e., be as efficient as possible. These two concepts—effectiveness (in achieving goals) and efficiency (capital balance) are the basic principles that every manager should follow. Implemented simultaneously, they lead to success, and satisfaction and confirm the development of the company. In practice, this means that the actions of managers and the economic condition of a company is evaluated on the basis of effectiveness (the degree of achieving goals) and efficiency (the degree of balancing the company's capital).
2. Managing a company would be a constant process of pursuing the goals and balancing the level of capital in the company (i.e., striving to bring the value of each capital closer to the optimal level relative to the other capitals). Managers, especially in energy companies, need to be aware that effectiveness (achieving goals) and efficiency (balancing capital) often contradict. The more efficient a company, the better is it able to achieve the assumed goal or goals. The more effective it is, the faster managers are able to reach an equilibrium point of capital and keep capital values near the equilibrium point for longer.

3. Equilibrium between the capitals of the enterprise is not the same as equal monetary value. As a rule, equilibrium is achieved between capitals of different monetary value. Sustainable management is not merely a balance between capitals but also between capitals and goals. This means that when planning our goals, we should take into account the extent to which the achievement of the company's goals would lead to an imbalance of capitals and whether the balancing of capitals is possible and at what time and to what extent.
4. Managing a company is most effective when the company reaches the A section of Figure 1, when it achieves its goal(s) with the greatest possible concentration of capital (material, structural, financial, market, human, and social). This ensures success and satisfaction. The issue is not the concentration of all six capitals, but the distance of each capital from its optimal value.
5. The B section of Figure 1 illustrates a situation in which a firm achieves its objectives but its effectiveness is low (low level of capital equilibrium). If the level of capitals is not adjusted, it could mean that they are not used properly (waste) and unnecessary costs are incurred. It should be noted that while the misuse or non-use of physical (structural) capital is clearly observable, the misuse or non-use of market and financial capital is also obvious but is usually less considered in practical management scenarios. The worst case is that of human and social capital, as these are the so-called hidden capitals that are rarely measured, and managers usually receive only incomplete or incidental information in this regard.
6. Section C of Figure 1 can be considered somewhat worse than B (although this depends on the strategy of the firm and the priorities of the shareholders), because the company is efficient (balances its capitals) but does not achieve its goals. Such a situation inhibits the development of the company and might entail legal, financial, or personnel-related consequences associated with the non-achievement of goals.
7. The worst case scenario is found in section D, which implies both failure to achieve the goals) and low efficiency of capital. In consequence, this not only means failure, but might also be the cause of a crisis or bankruptcy. It is clear that if a company is in this stage, decisive changes should be made.
8. The lines in Figure 1 are symbolic. In fact, every company moves linearly from development to bankruptcy, but this line is more of a curve, and often a loop. In practice, a company does not always move from A to D or the other way around. Achieving goals very often upsets the balance between capitals, so companies often end up in section B (e.g., they make an investment) and only later try to take care of the balance between capitals. The ideal would be to combine effectiveness (achievement of goals) with efficiency (balance of capitals).
9. There are many ways to calculate progress towards equilibrium. It could be expressed, for example, by the quotient of the sums of differences between the current values of individual capitals and the optimal values of these capitals ensuring the equilibrium of capitals by the number of capitals included in the calculations. For management purposes, the factors of the average percentage of capital difference (*MPD*) and weighted capital differences (*WCD*) would be important. These two factors should be used as measures in place of profit. Assuming that k_{oi} , where $i = 1, \dots, 6$ denote the present values of capital, property, structure, market, human, financial and social, respectively; k_{di} , where $i = 1, \dots, 6$, target (optimal) values for these capitals, while K is the sum of current capitals (goodwill), the coefficients are defined by the following formulas:

$$MPD := \max \left\{ 1 - \frac{\sum_{i=1}^6 \frac{|k_{oi} - k_{di}|}{k_{oi}}}{6}, 0 \right\}$$

$$WCD := \max \left\{ 1 - \frac{\sum_{i=1}^6 \frac{k_{o_i}}{K} \cdot |k_{o_i} - k_{d_i}|}{\sum_{i=1}^6 \frac{k_{d_i}^2}{K}}, 0 \right\} = \max \left\{ 1 - \frac{\sum_{i=1}^6 k_{o_i} \cdot |k_{o_i} - k_{d_i}|}{\sum_{i=1}^6 k_{d_i}^2}, 0 \right\}$$

- k_{o_i} , where $i = 1, \dots, 6$, denote the present values of capital, material, structural, market, human, financial and social, respectively,
 - k_{d_i} , where $i = 1, \dots, 6$, are the target (optimal) values of these capitals,
 - K is the sum of current capital (goodwill).
10. The *MPD* ratio indicates an average capital mismatch. It is very sensitive to large deviations of at least one capital, remaining much less sensitive to small deviations in many areas at the same time. If the *MPD* value is close to 1, it means that all capital is close to the expected optimal level. However, when its value is close to 0, we have two options—either all capitals are relatively strongly divergent from the expected values, or at least one of them is diametrically different from the expected value.
 11. The *WCD* index presents the company's efficiency as a whole. Due to the fact that the differences of each of the component capitals are weighted with the share of a given capital in the total value of the enterprise, it perfectly describes the general condition, but remains insensitive to the diametric deviations of capitals with the lowest current values. In the event that the *WCD* value is close to 1, this means that the changes that need to be made to achieve the ideal capital distribution, should be small. On the other hand, when its value is close to 0, the most important capitals for a given entity (i.e., those which currently had the highest values) are at a very bad level.
 12. Only the two ratios taken together provide information about the current condition of the company. While the latter characterizes overall effectiveness, the former could be used to find large errors in individual capitals, even those with the lowest value at the time. Such assessments could even be done on a daily basis, but such a high frequency is not necessary for daily management of a company. In practice, such assessments could be expected to be done on a monthly, quarterly and annual basis. In the course of the study, we were able to develop a mathematical approach of the discussed concept in the form of two ratios: average percentage difference of capitals and weighted capital difference.
 13. The current state of knowledge allows for a proper valuation of all six capitals in terms of their amount and value [67]. Companies therefore do not have to carry out such valuations on their own without the help of external experts.

5. Conclusions

The question of whether the introduction of management goals in energy companies could contribute to their higher efficiency is not easy to answer. The introduction of management goals allowed energy companies to address the issue of board member compensation and link these goals to results. It also made the purpose of the company's operations more visible and obvious to stakeholders, employees, and management. Previously, management's objectives (if any) were always part of a document called a strategy or plan, which was often not available to the public and only sometimes posted on the company's website. The problem was that the conclusions of the above study indicated that energy companies could not achieve maximum efficiency if they choose economic indicators (which were only measures of goal achievement) as goals and waste resources due to an imbalance between capitals.

Our new approach to the management goals proposed above aimed to introduce principles of sustainable capital management into the management process and to use profit and the existing accounting system almost exclusively for tax purposes. In the proposed model, there was a clear separation of purpose and effect. The economic result of a company should not be the goal of the company because it was only the result of achieving a goal. Such a goal could be market related, technology related, environmental, or social [68]. In the case of energy companies, the most important goal was an investment-related one. The six capitals could be managed to form their optimal size and aim at the

point of equilibrium. For the first time, managers were able to see and compare the value of all the capitals that contribute to the results of the company's activities.

We have already identified the possible future research. So far we have succeeded in:

- defining all six capitals of each company;
- developing a theoretical model for balancing capitals in accordance with intended goals;
- developing new mathematical formulas for calculating the effectiveness of capitals;
- establishing principles of valuation of all capitals for the purpose of their balancing;
- developing methodology for measuring Social Capital level (including testing);
- conducting research on the level of social capital, developing monetary methods for measuring social capital, and conducting a pilot measurement study in selected companies.

Yet, we also face the following challenges:

1. Building a mathematical model of the relationship between the capitals and the capitals and goals for the purpose of creating a computer application. The level of capitals will be constantly fluctuating; managers will strive to find equilibrium but this may only be for a brief moment. Managing a company will therefore be a continuous pursuit of the company's goals and a simultaneous striving for equilibrium of its capitals, i.e. minimising the distance between the current and target (optimal) values. The company is the most effective at the point of equilibrium. The problem is that at least for one of the capitals (so-called support point) we should be sure of its optimal level at any given time;
2. Refining our methods of capital valuation so that they would be as simple and reliable as possible. However, the simplest and most reliable methods do not always fully reflect the value of capital.

After completing the above, it is necessary to develop a computer application and to conduct pilot implementations in selected enterprises. As an initial step, such an application should be implemented in internal networks in order to protect sensitive data and avoid many problems associated with integrating internal systems of different companies. An enterprise-wide web application should be developed next, available to all authorized enterprises. The application will aggregate anonymised data from the enterprises. As a result, the solution is scalable and the associated cost of an individual implementation is reduced.

Upon completion of the research and implementation work, a central information system can be formed that collects anonymous data from individual enterprises to allow those enterprises to position themselves relative to the entire market and its competitors according to levels and efficiency of capital.

The article presents one solution to the problem of companies pursuing profit as their primary goal. Similar problem-solving methods can be replicated in other business sectors.

Author Contributions: Conceptualization, D.K.; methodology, E.J., D.K. and A.R.; formal analysis, E.J., D.K. and A.R.; resources, E.J., D.K. and A.R.; writing—original draft preparation, E.J. and D.K.; writing—review and editing, A.R.; visualization, E.J. and D.K.; supervision, A.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Abbreviations

CSR (Corporate Social Responsibility)—a concept whereby companies take into account social concerns and environmental protection, as well as relationships with various stakeholders, as early as the strategy formation stage.

EBIT—Earnings before Interest and Taxes.

EBITA—Earnings before Interest, Taxes and Amortization—the earnings of a company before deduction of interest, taxes and amortization expenses.

EBITDA—Earnings before Interest, Taxes, Depreciation and Amortization.

RES—Energy sources that could be renewed over a short period of time.

References

- Hawley, F.B. Enterprise and Profit. *Q. J. Econ.* **1900**, *15*, 75–105. [[CrossRef](#)]
- Hawley, F.B. The Controversy about the Capital Concept. *Q. J. Econ.* **1908**, *22*, 467–475. [[CrossRef](#)]
- Beckerath, H. MacGregor’s Enterprise Purpose and Profit. *Q. J. Econ.* **1936**, *50*, 367–371. [[CrossRef](#)]
- Coates, J.B.; Davis, E.W.; Stacey, R.J. Performance measurement systems, incentive reward schemes and shorttermism in multinational companies: A note. *Manag. Account. Res.* **1995**, *6*, 125–135. [[CrossRef](#)]
- Crowther, D.; Davies, M.; Cooper, S. Evaluating Corporate Performance: A Critique of Economic Value Added. *J. Appl. Account. Res.* **1998**, *4*, 3–34.
- Coram, B. Marx’s Theory of Profit: A critique. *J. Politics* **1983**, *18*, 100–103. [[CrossRef](#)]
- Berle, A.A.; Means, G.C. *The Modern Corporation and Private Property*; MacMillan: New York, NY, USA, 1932.
- Simon, H.A. A behavioral Model of Rational Choice. *Q. J. Econ.* **1955**, *69*, 99–118. [[CrossRef](#)]
- Simon, H.A. *Models of Man, Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting*; Wiley: New York, NY, USA, 1957.
- Simon, H.A. Theories of Decision-Making in Economics and Behavioral Science. *Am. Econ. Rev.* **1959**, *49*, 253–283.
- Simon, H. Rational Decision Making in Business Organizations. *Am. Econ. Rev.* **1979**, *69*, 493–513.
- Cyert, R.M.; March, J.G. *A Behavioral Theory of the Firm, Englewood Cliffs*; Prentice-Hall: New York, NY, USA, 1963.
- Petit, T.A. A Behavioral Theory of Management. *Acad. Manag. J.* **1967**, *10*, 341–350.
- Machlup, F. Corporate Management, National Interest, and Behavioral Theory. *J. Political Econ.* **1967**, *75*, 772–774. [[CrossRef](#)]
- Katona, G. On the Function of Behavioral Theory and Behavioral Research in Economics. *Am. Econ. Rev.* **1968**, *58*, 146–149.
- Argote, L.; Greve, H.R. A Behavioral Theory of the Firm: 40 Years and Counting: Introduction and Impact. *Organ. Sci.* **2007**, *3*, 337–349. [[CrossRef](#)]
- Greve, H.R. A Behavioral Theory of Firm Growth: Sequential Attention to Size and Performance Goals. *Acad. Manag. J.* **2008**, *51*, 476–494. [[CrossRef](#)]
- Powell, T.C.; Lovallo, D.; Fox, C.R. Behavioral Strategy. *Strateg. Manag. J.* **2011**, *32*, 1369–1386. [[CrossRef](#)]
- Barreto, I. A Behavioral Theory of Market Expansion Based on the Opportunity Prospects Rule. *Organ. Sci.* **2012**, *23*, 1008–1023. [[CrossRef](#)]
- Dźwigoł, H.; Dźwigoł-Barosz, M.; Miśkiewicz, R.; Kwilinski, A. Manager competency assessment model in the conditions of industry 4.0. *Entrep. Sustain. Issues* **2020**, *7*, 2630–2644. [[CrossRef](#)]
- Penrose, E.T. Limits to the growth and size of firms. *Am. Econ. Rev.* **1955**, *45*, 531–543.
- Penrose, E.T. Foreign investment and the growth of the firm. *Econ. J.* **1956**, *66*, 220–235. [[CrossRef](#)]
- Penrose, E.T. *The Theory of the Growth of the Firm*; Basil Blackwell: Oxford, UK, 1959.
- Penrose, E.T. The growth of the firm: A case study: The Hercules Powder Company. *Bus. Hist. Rev.* **1960**, *34*, 1–23. [[CrossRef](#)]
- Marris, R. A Model of the “Managerial” Enterprise. *Q. J. Econ.* **1963**, *77*, 185–209. [[CrossRef](#)]
- Marris, R. *The Economic Theory of Managerial Capitalism*; MacMillan: London, UK, 1964.
- Koutsoyiannis, A. *Modern Microeconomics*; MacMillan: London, UK, 1979.
- Baumol, W.J. *Business Behaviour, Value and Growth*; MacMillan: New York, NY, USA, 1959.
- Sandmeyer, R.L. Baumol’s Sales-Maximization Model: Comment. *Am. Econ. Rev.* **1964**, *54*, 1073–1081.
- Dobson, S.; Maddala, G.S.; Miller, E. *Microeconomics*; McGraw-Hill Book Company Europe: Berkshire, UK, 1995.
- Williamson, O.E. Managerial Discretion and Business Behaviour? *Am. Econ. Rev.* **1963**, *53*, 1032–1057.
- Williamson, O.E. *The Economics of Discretionary Behaviour: Managerial Objectives of the Theory of the Firm*; Englewood Cliffs, Prentice-Hall Inc.: New York, NY, USA, 1964.
- Williamson, O.E. *Corporate Control and Business Behavior: An Inquiry into the Effects of Organization Form on Enterprise Behavior*; Prentice Hall: New York, NY, USA, 1970.
- Jones, T. *Business Economics and Managerial Decision Making*; John Wiley and Sons: West Sussex, UK, 2004.
- Hopkins, M. What is corporate social responsibility all about? *J. Public Aff.* **2006**, *6*, 298–306. [[CrossRef](#)]
- Jenkins, R. Globalization, Corporate Social Responsibility and poverty. *Int. Aff.* **2005**, *81*, 525–540. [[CrossRef](#)]
- Blowfield, M. Corporate Social Responsibility: Reinventing the meaning of development? *Int. Aff.* **2005**, *81*, 515–524. [[CrossRef](#)]
- Kor, Y.Y.; Mahoney, J.T. Penrose’s Resource-Based Approach: The Process and Product of Research Creativity. *J. Manag. Stud.* **2000**, *37*, 109–139. [[CrossRef](#)]
- Kor, Y.Y.; Mahoney, J.T.; Siemsen, E.; Tan, D. Penrose’s The Theory of the Growth of the Firm: An Exemplar of Engaged Scholarship. *Prod. Oper. Manag.* **2016**, *25*, 1727–1744. [[CrossRef](#)]

40. Edvinsson, L.; Malone, M.S. *Intellectual Capital: Realizing You Company's True Value by Finding Its Hidden Brainpower*; Harper Business: New York, NY, USA, 1997.
41. Barney, J.B. Firm resources and sustained competitive advantage. *J. Manag.* **1991**, *17*, 99–120. [[CrossRef](#)]
42. Stewart, T.A. *Intellectual Capital: The New Wealth of Organizations*; Bantam Doubleday Dell Publishing Group: New York, NY, USA, 1997.
43. Sveiby, K.E. The Intangible Assets Monitor. *J. Hum. Resour. Costing Account.* **1997**, *2*, 73–97. [[CrossRef](#)]
44. Marr, B. *Perspectives on Intellectual Capital*; Elsevier: Amsterdam, The Netherlands, 2005.
45. Mouritsen, J. Problematising intellectual capital research: Ostensive versus performative IC. *J. Intellect. Capita* **2006**, *19*, 820–841. [[CrossRef](#)]
46. Klimek, D. Sustainable Enterprise Capital Management. *Economies* **2020**, *8*, 12. [[CrossRef](#)]
47. Klimek, D.; Jedrych, E. A Model for the Sustainable Management of Enterprise Capital. *Sustainability* **2021**, *13*, 183. [[CrossRef](#)]
48. Ustawa z Dnia 9 Czerwca 2016 r. o Zasadach Kształtowania Wynagrodzeń Osób Kierujących Niektórymi Spółkami, Dz.U. 2016 poz. 1202. Available online: <http://isap.sejm.gov.pl/> (accessed on 30 October 2020).
49. Druk nr 514—Rządowy Projekt Ustawy o Zasadach Kształtowania Wynagrodzeń Osób Kierujących Niektórymi Spółkami. Available online: <http://www.sejm.gov.pl/Sejm8.nsf/druk.xsp?nr=514> (accessed on 30 October 2020).
50. Klimek, D. Wpływ celów zarządczych na zarządzanie spółkami komunalnymi. *J. Manag. Chall.* **2018**, *71*, 5–15.
51. Resolution No. 44 of the Ordinary General Meeting of Shareholders of Polski Koncern Naftowy Orlen Spółka Akcyjna of 14 June 2019 and Attachment to the Resolution. Available online: www.ornlen.pl/2019_06_14_ZWZ_Uchwa_T1_ly (accessed on 14 June 2019).
52. Resolution No. 4 of the Extraordinary General Meeting of Shareholders of Polski Koncern Naftowy Orlen Spółka Akcyjna of 24 January 2017. Available online: www.ornlen.pl/2019_06_14_ZWZ_Uchwa_T1_ly (accessed on 24 January 2017).
53. Resolution No. 4 of the Extraordinary General Meeting of Shareholders of PGE Polska Grupa Energetyczna Spółka Akcyjna of 2 December 2019. Available online: <https://www.gkpgge.pl/Relacje-inwestorskie/Walne-Zgromadzenia/2019> (accessed on 2 December 2019).
54. Resolution No. 4 of the Extraordinary General Meeting of Shareholders of PGE Polska Grupa Energetyczna Spółka Akcyjna of 14 December 2016. Available online: <https://www.gkpgge.pl/Relacje-inwestorskie/Walne-Zgromadzenia/2019> (accessed on 14 December 2016).
55. Attachment to Resolution No. 9 of the Ordinary General Meeting of Shareholders of PGE Polska Grupa Energetyczna S.A. of 26 June 2020. Available online: <https://www.gkpgge.pl/Relacje-inwestorskie/Walne-Zgromadzenia/2019> (accessed on 26 June 2020).
56. Resolution No. 2 of the Extraordinary General Meeting of Shareholders of PGE Polska Grupa Energetyczna Spółka Akcyjna of 2 December 2019. Available online: <https://www.gkpgge.pl/Relacje-inwestorskie/Walne-Zgromadzenia/2019> (accessed on 2 December 2019).
57. Resolution No. 9/XI/2016 of the Extraordinary General Meeting of Shareholders of Polskie Górnictwo Naftowe i Gazownictwo S.A. of November 24, 2016. Available online: <https://pgnig.pl/documents/10184/2748153> (accessed on 24 November 2016).
58. Resolution No. 22/2020 of the Ordinary General Meeting of Polskie Górnictwo Naftowe i Gazownictwo Spółka Akcyjna of 24 June 2020. Available online: <https://pgnig.pl/documents/10184/2748153> (accessed on 24 June 2020).
59. Keen, S.; Stanish, R.K. Profit Maximization, Industry Structure, and Competition: A critique of neoclassical theory. *Phys. A* **2006**, *370*, 81–85. [[CrossRef](#)]
60. Lambert, C.; Sponem, S. Corporate governance and profit manipulation: A French field study. *Crit. Perspect. Account.* **2005**, *16*, 717–748. [[CrossRef](#)]
61. Worthington, A.; West, T. Economic Value-Added: A Review of the Theoretical and Empirical Literature. *Asian Rev. Account.* **2001**, *9*, 67–86. [[CrossRef](#)]
62. Daraban, M. Economic Value Added. A General Review of the Concept. *Ovidius Univ. Ann. Econ. Sci. Ser.* **2017**, *XVII*, 168–173.
63. Saługa, P.W.; Szczepańska-Woszczyzna, K.; Miśkiewicz, R.; Chład, M. Cost of equity of coal-fired power generation projects in Poland: Its importance for the management of decision-making process. *Energies* **2020**, *13*, 4833. [[CrossRef](#)]
64. Miśkiewicz, R. Challenges facing management practice in the light of Industry 4.0: The example of Poland. *Virtual Econ.* **2019**, *2*, 37–47. [[CrossRef](#)]
65. Drózdź, W.; Szczerba, P.; Kruszyński, D. Issues related to the development of electromobility from the point of view of Polish utilities. *Polityka Energetyczna Energy Policy J.* **2020**, *23*, 49–64. [[CrossRef](#)]
66. Drózdź, W.; Mróz-Malik, O. Challenges for the Polish energy policy in the field of offshore wind energy development. *Polityka Energetyczna Energy Policy J.* **2020**, *23*, 5–18. [[CrossRef](#)]
67. Jedrych, E.; Klimek, D. Social Capital in the Company (Meat and Vegetable Processing Industry). *Econ. Sci. Agribus. Rural. Econ.* **2018**, *2*, 300–305.
68. Prokopenko, O.; Miśkiewicz, R. Perception of “Green Shipping” in the contemporary conditions. *Entrep. Sustain. Issues* **2020**, *8*, 269–284. [[CrossRef](#)]