Article

Strategies of European Energy Producers: Directions of Evolution

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Abstract: The article presents an innovative method of analyzing energy companies' strategies, which aims to identify the strategic orientation of the entities subject to the research and, thus, to initially define the directions of strategic changes in the analyzed sector. The aim of the research, the results of which were used in this publication, was to identify the features of energy sector companies' strategies in the European Union in the period of sector transformation caused by the new climate policy. The analysis area is the energy sector, i.e., the sector whose fundamental strategic goal is energy production. The research used a critical analysis of the subject literature and desk research method with the use of the researchers' own analytical equipment, developed for the needs of this analysis. It was assumed in the conducted research that the primary source of information in the empirical study, the information subject to subsequent analysis, was the analysis of official documents (strategies, financial reports, etc.) posted on the websites of the surveyed corporations. The research results indicate the dominance of the resource-based approach in implementing strategic postulates of the surveyed companies. Nevertheless, the operational activity focuses on the implementation of innovative solutions towards decarbonization and climate neutrality.

Keywords: management; schools of management; planning approach; positional school; resource-based approach to strategy; the innovative and entrepreneurial approach; network organization; energetics; regulated sector; strategy; energy producers

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1. Introduction

Changes in the energy sector across the world are happening due, inter alia, to political and legal conditions and regulations [1], which have transformed this strategic sector and affected the efficiency of operations that guarantee the proper functioning of the economies of states, countries, and regions. The energy policy of the European Union, its goals, and measures have been subject to profound evolution due to the global energy crises [2], environmental threats [3,4], an increase in the prices of energy resources and electricity prices [5], as well as the economic integration in the European Union [4].

These factors have resulted in the formation of three main groups of energy policy objectives: increasing the economy's competitiveness, maintaining the energy security of EU countries, and the protection of the natural environment against the harmful effects of energy production and supply [2,6]. Importantly, their implementation should include sets of activities at the macro-, meso- and micro-levels.

The economic practice of many highly developed countries shows that social and economic development results from the impact and cooperation of many interdependent

groups and the actions of authorities and economic leaders. Moreover, the potential development opportunities of regions increase by conducting an active regional development policy, in line with the adopted strategy of the energy sector [7]. This strategy should take into account the differences of interests, the autonomy of participants, cooperation between them, unforeseen events, and mutual learning resulting from them. On the other hand, its effectiveness will be greater if the aspects of networking, innovation, creativity, and intellectual values are taken into account.

Considering the problem of strategy in the analyzed energy sector, attention should be paid to the importance of the goals hierarchy that determines various types of strategies. The primary strategic documents on which the conducted energy policy is based are EU guidelines [8–17] as well as the long-term and medium-term development strategies of European countries [18], containing significant indications from the perspective of defining development activities. It should be emphasized that the energy policy of the EU countries determines the strategies of the Member States [5]. These strategies, in turn, provide the basis for guiding policy documents at lower levels. However, all EU countries should be precisely considered and analyze their statutory obligation to prepare a document equivalent to the European Union's legal system [3]. The coherence of the goals' hierarchy [19] and the direction of interventions in the field of energy policy is a condition for the effectiveness of these activities. This causes the necessity to redefine and adjust the strategy and actions of all participants [20].

B. Fattouh et al. [21] note that the global energy industry is approaching another energy transformation. The 21st century will be characterized by an increasing share of cost-competitive renewable technologies and a shift away from high-carbon fuels. Critical uncertainty is related to the pace of transformation and its impact on the business strategy of companies and countries.

Therefore, it is essential that the EU tackle the significant energy challenges, setting out an ambitious energy policy that encompasses the full range of energy sources, allowing the transformation of economies to low energy while ensuring greater security, competitiveness, and sustainable energy consumption [5]. However, this means that policy change is transforming the sector [22] and its companies [23–26], who are seeking to align their strategy with top-down guidelines [27], as well as become change agents.

It should be emphasized that one cannot talk about a long-term operation in the energy sector without a clearly defined strategy, which, apart from the tasks mentioned above, also allows the creation of a desired vision of the future. The issue of strategy is critical in the energy sector, as the reliable functioning of this part of the economy is a crucial element of the entire national economy's stability [28].

The area of research on identifying strategies and types of enterprises developed by the energy sector, including those as a result of the adopted EU strategies, environmental conditions, digitization, or climate transformation, is still evolving in the scientific literature [20,24,26–36].

It can be noticed that the strategies of these enterprises are constantly changing, being influenced by global trends and adapting to the turbulent market environment, technology development, and the continually growing social awareness of the energy impact on health and the environment. On the one hand, this requires a new approach to linking the issues of long-term development planning with building the company's strategy. On the other hand, companies must respond to new development directions of the entire sector. To be able to function effectively, these companies must have flexible [21], carefully prepared and implemented development strategies, systematically adapted to the new operating conditions [28]. It is also crucial to review strategic priorities more frequently [37].

Despite the great interest in energy transformation and the strategy of companies from the energy sector, we have noticed a research gap in identifying the changes within strategies of these companies concerning the main strategic trends. The insufficient analysis and description of the presented thematic area has also been highlighted by J. Brzóska [31],

who believes that in the aspect of the changes taking place in the EU energy sector, energy companies determine their cognitive and utilitarian values in a specific way.

Therefore, the purpose of this publication is to identify the features of the main strategies of the energy sector companies in Western Europe in the period of sector transformation caused by the new climate policy.

This paper is part of a current and relevant scientific discussion. The article's structure consists of the theoretical part in which the evolution of energy policy, the conceptual assumptions of the research approach, and the characteristics of the distinguishing features in selected approaches to the strategy in sectors of energy enterprises are discussed.

The second empirical part presents unique research results along with the application of a critical analysis of the subject literature and desk research with the use of the researchers own analytical equipment, developed for the needs of this analysis. The research part is based on the results of a study focused on 40 corporations. The article ends with conclusions, research limitations, and further research directions.

2. Evolution of Energy Policy

The year 1973 was a turning point for the whole world. The oil crisis, known as the first energy crisis, and the associated increase in oil prices, triggered by the Israeli–Arab war changed the approach to energy resources worldwide. The drastic increase in the price of a crude oil barrel from USD 3 to USD 25 was the beginning of an extensive search for alternative energy sources that could become a guarantee of quasi energy stability. The aforementioned experiences of the first crisis resulted in a focus on the search for new hydrocarbon deposits, the exploitation of known but so far unprofitable oil deposits, and a reduction in liquid fuels' consumption in the power and heating sectors [38]. This trend also accelerated the implementation of nuclear programs and intensified cooperation between highly developed countries, forming, among others, The International Energy Agency (IEA, 1974), the main goal of which was to optimize and increase the energy security of the member states. The second oil crisis (1979–1980) and the Gulf War (1990–1991) were not so dramatic in their consequences thanks to the mechanisms developed, inter alia, by the IEA, supported by the activities of OPEC (Organization of the Petroleum Exporting Countries) [2]. Nevertheless, they made it clear that the possibilities of oil supply were limited and that the time of cheap oil had passed irretrievably, thus triggering the need for economical fuel and energy management [39] and the search for other sources of energy. The oil crises also changed the area of strategic management theory. It was then that M. Porter's concepts appeared, aimed at actions in a situation of market constraints and boiling down to companies creating a strategy mainly as a competitive struggle strategy [40].

Crude oil, including liquefied gas from oil deposits, is one of the primary energy sources. Other non-renewable energy sources are: coal and lignite, bituminous shale and natural bitumens, natural gas, and uranium fuel, which are classified as resources, based on proven recoverable reserves and estimated additional amounts in place. In addition to non-renewable sources, the reserves of which are presented in various studies [41], renewable energy sources began to play a larger role in the global energy economy, namely: hydropower, biomass, wind energy, and geothermal energy, as well as the energy of the sun and sea waves and the thermal energy of the oceans. The depletion of fossil fuel resources, the potential instability of fuel supplies resulting from historical data, as well as the formation of a significant amount of various pollutants during their combustion, which negatively affect the natural environment, has shifted the attention of global economies towards renewable energy sources.

Renewable energy can be defined as “derived from natural repeating processes, obtained from renewable non-fossil energy sources”. These energies are an alternative to traditional, non-renewable fossil fuels, and their resources complement each other in natural processes, creating not new but the most current energy from the perspective of contemporary needs and sources of “green” energy [42]. These values are steadily growing, and in the entire European Union, the share of energy from renewable sources increased to

18.9% in 2018 and 19.7% in 2019 (EU-27) [43], and the five EU countries with the highest share of renewable energy in energy consumption are Sweden, Finland, Latvia, Denmark, and Austria.

The latest report on renewable energy appeared in Nature Communications. It presents research on energy consumption in the 42 most important countries in the period from 1980 to 2018. It turns out that wind and solar energy can meet more than 80% of energy needs without storing too much. The study shows that even without energy storage, the countries covered by the analysis would have their energy needs met 72–91% of the time. With proper energy storage, rates would increase to 83–94% [44]. These coefficients differ for the different latitudes of the countries they apply to. In the case of Germany, energy storage is suggested, as well as the combined use of its many sources. Denmark is the undisputed leader in energy from wind farms and Spain from the sun. This is in line with WWF's (World Wildlife Fund) vision, assuming that by 2050 the world will be powered by 100% renewable energy [45].

Such a breakthrough moment for the renewable energy sector's development was the 2015 conference in Paris (COP21), the effect of which was the signing of the Paris Agreement and the commencement of cooperation between countries from all over the world. The agreement's long-term goal is to keep the global average temperature below 2 °C compared to pre-industrial times and take measures to ensure that this index does not exceed 1.5 °C. The agreement came into force on 4 November 2016 upon the ratification of the agreement by at least 55 countries responsible for at least 55% of global greenhouse gas emissions, and it was ratified by all European Union countries [14].

Europe's greatest challenge is to become the world's first climate-neutral continent by 2050. For this purpose, on 11 December 2019, the European Commission presented the European Green Deal, i.e., a set of mechanisms and related activities aimed at the green transformation. Moreover, the document provides for integrating the UN Sustainable Development Goals and defines energy strategies for a safe, sustainable, and low-carbon economy [10]. The European Green Deal is also expected to help end the COVID-19 pandemic. The European Green Deal will be financed by one-third of the EUR 1.8 trillion invested in the NextGenerationEU recovery plan and by the EU's seven-year budget [15].

The year 2020 was a continuation of the world's plans to decarbonize (i.e., reduce the carbon intensity) the world. The number of renewable energy deals has increased as both companies and utility companies prepare to meet climate goals. The consequence of such assumptions will be consolidations throughout the value chain, the improved economic competitiveness of various entities, and an increase in transactional activity in the energy sector: 144 out of 174 mergers and acquisitions since December 2020 concerned assets or companies from the renewable energy sector [46].

3. Conceptual Distinguishing Features of the Research Approach

Strategy is one of the most important management and organizational documents of any organization. It is also, and above all, a way of conduct for the organization's management that is acceptable to the organization's stakeholders. In common understanding, it is synonymous with what is most important in the activities of an organization. At the same time, in formal terms, it is only a selected method of achieving the strategic goal of each organization. In the face of the enormous diversity of conceptual approaches to both the definition of the strategy and the methods of its determination (strategic management schools [28,47–53], it was decided to use the classification presented by J. Niemczyk [40]. The author indicates concepts that allow determining significant boundaries between their key distinguishing features, thus providing a clear distinction of their specific types [40]:

- planning approach to strategy,
- positional approach to strategy,
- resource-based approach to strategy,
- innovative and entrepreneurial approach to strategy,
- network approach to strategy.

The precursor of the analytical approach to strategy was H.I. Ansoff [54], who indicated that strategy consists of synergistic components [55]:

- product and market orientation;
- growth vector indicating the directions of development of companies taking into account product and market positions: (a) market penetration, (b) market development, (c) product development, and (d) diversification;
- isolation of unique opportunities within the product-market orientation and the growth vector, which the author calls competitive advantage.

Together, they create the market path for the organization in its environment. The first describes the scope of the search, the second, their directions, and the third, barriers to entering the market. According to the author, there is a synergy between them, which is the company's measurable ability to generate profits from new product-market orientations. Strategy in the planning approach, along with a detailed specification of organizational goals that H.I. Ansoff was the first to classify into three main groups, distinguishing strategic, administrative, and operational purposes, focuses on issues related to the environment rather than the inside of the organization [55] and is a disciplined and rational process [56]. The distinguishing features of this approach are a strategy adjusted to the environment and oriented at maximizing profits resulting from their proper distribution [40,57]. The strategic plan, which was the basic tool [28], was a consequence of the belief in the predictability and stability of the environment, as well as the accuracy of forecasts and rationality of decisions made.

The development of the positional school in theoretical terms, management science owes to M.E. Porter. However, the foundations of this school can be found in the works of E.H. Chamberlin, who was the first to emphasize monopolistic competition [58]. The essence of the strategy in the positional approach is to achieve a competitive advantage [59], while its basic distinguishing features are the following assumptions: (a) the company's environment is the starting point for building and analyzing the strategy, (b) strategy formulation always takes place in terms of competition, (c) minimization of costs and differentiation determine strategic success, and (d) the recommended size of the organization is small or large [57].

Therefore, the development of the strategy is accompanied by diagnostic tests in the field of the strategic and competitive position of the organization, which results in the organization's transformation, consisting of the optimization of production decisions, inventory management, or coordination of activities [57]. Paradoxically, operational efficiency becomes the strategic goal in the positional trend, and the return on invested capital and income per employee are its basic assumptions [60]. The organization's attention focuses on the following changes [61]:

- (a) restructuring, resulting from the slimmer, simplified, and streamlined organization;
- (b) redesigning operational processes (reengineering), simplifying and increasing the speed of critical processes;
- (c) creating organizational culture: mission, values, and beliefs become clearer and emphasize the need to generate value for the environment: customers and stakeholders;
- (d) human resource management: correcting the existing relations with employees to increase the flexibility of work, their participation, and responsibility for the company, and focus on combining motivation with the development of the organization.

In the positional approach, the organization's activities are operationalized, and concepts such as Total Quality Management, benchmarking, time-based competition, and outsourcing are created, which, however, does not lead to a permanent increase in profitability [62]. The most frequently implemented strategies in this trend are the so-called generic strategies: overall cost leadership, differentiation, and focus [63].

The resource-based approach to strategy diminishes the role of the environment in the process of shaping the strategy, and the focus is more on the inside of the organization and its resources and skills. Scientists permanently connected to this trend are E. Penrose, K.

Prahalad, G. Hamel, J.B. Barney, G. Stalk, P. Evans, L.E. Shulman, and J. Kay. However, the origins of this strategic idea should be sought earlier, in the works of I. Ansoff [55], A.D. Chandler Jr. [64], B. Wernerfelt [65], and P. Selznick [66], who introduced the category of “distinctive competence” [67] of the organization into management, contrasting it with the category of “ineptitude”.

The leading theories of competitive advantage sources in terms of resources are (a) the core competencies theory by G. Hamel and C.K. Prahalad, (b) the concept of competing based on the company’s ability of G. Stalk, P. Evans, and L.E. Shulman, and (c) J. Kay’s theory of distinctive abilities. These theories define what types of resources are critical in the process of generating competitive advantage, ways of shaping these resources, and their effective use in a strategic dimension.

Therefore, the company’s strategy is focused on building such a bundle of competencies, according to G. Hamel and C.K. Prahalad, which will guarantee the organization’s dynamic development using knowledge and learning processes, regardless of organizational boundaries (according to the authors). They pay particular attention to the coordination of employees’ skills and the integration of various sources of knowledge (including technology flows), for which the key success factors are communication, commitment, and involvement in organizational processes [68]. In a polemic with G. Hamel and C.K. G. Stalk, P. Evans and L.E. Shulman in the “Harvard Business Review” [69] argued that key competencies in the context of creating a competitive advantage constitute a complex category of resources and skills, and therefore should instead be called “skills” of the company. These, in turn, can be defined as “a set of strategically understandable business processes” [70], which the authors prove by analyzing global organizations (Honda, Wal-Mart, Canon).

R. Amit and P.J. Schoemaker also placed the critical importance of processes, describing “skills” as (iterative) processes and product innovation, production flexibility, responsibility for shaping market trends, and short product development cycles [71]. This approach was developed later by D.J. Teece, G. Pisano, and A. Shuen, giving these skills a dynamic character and defining them as those that enable the company to adapt, integrate, and reconfigure internal and external organizational skills, resources, and competencies [72]. Therefore, dynamic capabilities are the ability to integrate, build, and reconfigure internal and external competencies aimed at the suddenly changing environmental conditions in which these organizations function, the primary sources of which should be sought in microfoundations, individual activities (microactions), and microaspects [72].

In turn, relations and the connected relational capital become determinants of the organization’s success, thus permanently occupying an unquestionable place in the theory and practice of strategic management, including the concept on which J. Kay based his conclusions. The author identified three basic distinguishing capabilities of the company, namely the architecture of the organization, the company’s reputation, and innovation, making market efficiency dependent on these elements [73]. At the same time, he emphasized that they do not have to co-occur to allow the company to be able to achieve a competitive advantage, and they may not exist at all. In this case, access to strategic resources becomes crucial, replacing the need to have distinctive capabilities (e.g., a license to use a natural resource or having an exclusive right to provide a specific good) [73].

The foundation of the strategy in the innovative and entrepreneurial approach are activities that highlight building a competitive advantage based on the skillful use of fleeting opportunities [57]. They result from the disruptive technologies theory, according to which organizations investing significant financial resources in developing a product based on new technologies cannot maintain a competitive advantage in the long term. The authors of this concept argue that these types of enterprises are doomed to failure for one prosaic reason, namely, they stay too close to their customers. As a result of performance trajectories, progressive product and service cannibalization generates results in the form of customer satisfaction with solutions already known to them [74]. In the case of the energy sector, already in 2013, McKinsey Global Institute emphasized that the renewable energy sector will be such disruptive technologies, and with it the generation of electricity

from renewable sources with reduced harmful climate impact, and also advanced oil and gas exploration and recovery, which will make the extraction of unconventional oil and gas economical [75]. This fact was additionally emphasized by the findings at the Paris conference in 2015 and by other studies on the disruptive technologies' impact on the energy sector [76].

In this way, a new business model is implied, the foundation of which is innovation and the implementation of a self-regenerating mechanism for the emergence of market opportunities, which implies the need to apply an innovative strategy. Open innovations taking the form of outside-in (e.g., crowdsourcing) and inside-out (e.g., knowledge sharing in the form of coopetition) strategies are such a tool of the entrepreneurial and innovative trend [77]. Therefore, the changing model of organization development based on the global network caused a change in the value chain of many organizations and resulted in the expansion of the channels of knowledge inflows and outflows [78–80]. Coopetition in the energy sector may seem particularly interesting, mainly due to the fact that it is a sector: (a) regulated and (b) composed of a relatively limited number of market players in individual countries, which is confirmed in the following parts of this study. Nevertheless, the growing importance of coopetition alliances underlines the need for research in the field of value creation achieved by competitive behavior [45], especially when proposed research confirms such systems' creation in Western Europe, regardless of the issue dimensions (locally, in the form of international cooperation, or network cooperation [46], and also in the context of pandemic threats [81].

In addition, due to the growing importance of innovation, an approach that strongly emphasizes the role of innovative solutions in the area of strategy is value innovation. This model aims to minimize costs without having to offer less value to its customers due to giving up competition in existing markets. Value innovation is a strategy covering all areas of the organization, consisting of integrating utility, price, and costs with market pioneering [82].

The newest way to think about strategy is the concept of network organization. The strategy of such an organization will focus on achieving a common goal—not an individual entity goal anymore but a network of individuals connected by common bonds [83], engaged in a long-term relationship [84]. Interactions between organizations are long term, involving exchange, commitment, and reciprocity [85], in terms of resources, actors, and activities, without clearly delineating boundaries and structure [86]. The strength of an entity in the network does not depend on its specific position in imperfect markets but on the links with customers, suppliers, sellers, and competitors, and the very adaptability and the ability to exchange information are critical features of the network according to much of the research [87].

Networks are nowadays slowly becoming the dominant form of economic activity. This is mainly because most of the contemporary organizations notice the undeniable benefits from participation in this type of system. Such a tendency is also driven by a good diagnosis of inter-organizational network functioning mechanisms and increasing awareness of these interaction systems' diversity [88–90].

The analyzed schools and their distinguishing features are shown in Table 1.

Table 1. Differentiators of strategies in selected schools of strategic thinking.

Strategic Approach	Orientation of Strategic Goals	Strategy Differentiators
Planning	financial result and production activities	<ul style="list-style-type: none"> - dominance in the strategy description with categories such as plan, long-term, production costs, product diversification - building efficiency primarily based on economies of scale and the experience curve - focus on the long-term planning of activities - diversification criteria based on the economy of scale or scope guideline
Positional	increasing market shares, focusing on long-term competitive advantage	<ul style="list-style-type: none"> - emphasizing categories related to obtaining a competitive advantage in the strategy - building efficiency by increasing market share - domination in the strategy description with categories such as a sector, segment, advantage, entry barriers, risk - diversification criteria based on balancing risk and utility (portfolios)
Resource-based	building the value of the organization in terms of economic value	<ul style="list-style-type: none"> - highlighting the key competencies in the strategy - domination in the strategy description with categories such as resources, key competencies, value building, KPIs, stakeholders - effectiveness built on financial methods of building value - diversification criteria based on the use of key competencies
Innovative and entrepreneurial	“blue ocean”, focusing on actions in the strategy description at the expense of defining strategic goals	<ul style="list-style-type: none"> - domination in the strategy description with categories such as innovation, processes, intellectual value - diversification criteria based on the guideline to look for sources of innovation or “blue ocean” areas, engaging in cooptation - effectiveness resulting from the continuous generation of product, business, financial, and other innovations
Network	building an ecosystem understood as a network of interdependent and sharing resources and values of the organization	<ul style="list-style-type: none"> - domination in the strategy description with categories such as network, relations, stakeholders - domination of effectiveness based on building a network of values, using the network effect - diversification criteria based on the use of the network effect, including other customer groups - utilizing the following categories: ecosystem, cluster, service centers, technology parks, franchise

Source: [91] (based on a research proposal by [92]).

4. Research Procedure and the Research Sample Description

The aim of the research, the results of which were used in this publication, was to identify the features of energy sector companies' strategies in the European Union in the period of sector transformation caused by the new climate policy. The analysis area is the energy sector, i.e., the sector whose fundamental strategic goal is energy production. In turn, the strategy was defined as the manner of achieving this strategic goal declared in the company's strategic documents. The strategies of energy producers in the European Union were analyzed, which was a deliberate choice. Here, all producers should already be in the area of the adopted climate policy defined in Paris. Therefore, the article poses the following hypothesis:

Hypothesis 1 (H1). *The strategies of energy producers are evolving towards innovation strategies.*

To confirm this hypothesis, the 1st iteration of the research was conducted using the adopted methodology, the results of which are presented in this article. The subsequent iterations of the study with the proposed method will be carried out in 3 years (2nd iteration) and 6 years (3rd iteration). Thanks to this approach, comparative statements will be obtained, from which it will be possible to finally verify the presented hypothesis. The graphical flowchart for the crucial work steps within the adopted method has been prepared (Figure 1).

The research used a critical analysis of the subject literature and desk research method with the use of researchers own analytical equipment, developed for the needs of this analysis. It was assumed in the conducted research that the primary source of information in the empirical study, information subject to subsequent analysis, would be the analysis

of official documents posted on the websites of the surveyed corporations. The first step was to select the research sample. Energy corporations located in the European Union were chosen for the research. During the preliminary procedure, 41 corporations meeting the following criteria were selected:

- the corporation is registered in one of the 10 largest countries in the European Union in terms of population,
- the corporation is one of the largest energy companies in a given country in terms of value, engaged in activities related to energy production.

One organization located in the United Kingdom was selected, despite the fact that in 2020 it left the European Union. Most of the analyzed data concern the period up to 2019, and the influence of British organizations on the EU market is evident. Since, in the case of one of the pre-selected organizations from Romania (Transgex), it was impossible to obtain appropriate data allowing for a proper assessment of the dominant strategic approach, this unit was excluded from the research sample. As a result, a list of 40 corporations (Table 2) was obtained, which were subject to detailed analysis.

Table 2. Research sample *.

Country	Enterprises Analyzed
Germany	RWE AG, ENBW Energie, Siemens Energy, E.ON SE, Thuega Holding
United Kingdom	EDF
France	Engie, Albioma SA, Elec de Strasbrg, Neoen
Italy	Enel, A2a, Acea, ERG, Saras
Spain	Iberdrola, Endesa, Naturgy Energy, Acciona, EDP Renovaveis
Poland	PGE, ENEA, Tauron, Ze Pak, PGNIG
Romania	Societatea natio, Electrica SA
The Netherlands	Photon Energy
Belgium	Tessenderlo Group, Picanol
Greece	Public Power Corp, Mytilineos SA, GEK Terna Holding, Terna Energy, Karatzis SA, PPC Renewables
Czech Republic	CEZ AS, Energo-PRO, EP Energy, E4U

* Countries by population, companies by Market Capitalization (highest first). Source: own research based: Bloomberg industry Classification Standard [93].

The next step was to verify the availability and timeliness of the information on the strategy on the websites of individual corporations. The research assumption was the analysis of the facts as of 1 October 2021. The next stages of the research were carried out in accordance with the descriptions contained in Figure 1. The research procedure was based on the methodological guidelines included in the study by J. Niemczyk and J. Jurczyk [94].

In line with the previously adopted assumption, this study uses selected approaches to the strategy, and their summary is presented in Section 3 of this study. The analytical approach used in the paper assumes conducting a study of the energy corporations' strategies based on the adjustment of the expressions used for the purposes of strategy formulation and the epistemology of description to a specific strategic approach implemented in economic practice.

Figure 1. Planned work steps of the conducted study.

5. Results

The interpretation of the research results after the desk research procedure, with the use of the previously described, in-house analytical apparatus, allows for the unequivocally negative verification of the hypothesis adopted in this article: “the strategies of energy producers are evolving towards innovation strategies”. According to the summary presented in Figure 2, the dominant strategic approaches in the activity of the 40 surveyed companies of the European energy sector, declared in the formal strategic documents, as well as in the vision, mission, and organizational values, and in the implemented system of strategic goals, are primarily the resource-based approach (exactly 50% of the analyzed entities) and the innovative and entrepreneurial approach (32.5%). The dominance of the positional approach to strategy was found in only five organizations (12.5%) and the network approach to strategy in only two of them (5%). It is also worth noting that with the applied analytical apparatus, no dominance of the planning approach to strategy was found in any of the studied entities.

Figure 2. Prevalence of dominant strategic approach types among the researched European corporations from the energy sector (source: own elaboration).

It is worthwhile analyzing the observed phenomenon in a little more detail. For this reason, the considered distribution of the dominant strategic approaches in relation to the individual countries in which the analyzed organizations from the energy sector operate is presented in Table 3. The analysis of the indicated table enables further conclusions to be reached, based on several criteria.

Table 3. Prevalence of dominant strategic approach types among the researched European corporations from the energy sector concerning individual countries (source: own elaboration).

Country	Planning Approach to Strategy	Positional Approach to Strategy	Resource-Based Approach to Strategy	Innovative and Entrepreneurial Approach to Strategy	Network Approach to Strategy	Total Number of Analyzed Enterprises within Country
Germany	0	1	0	3	1	5
United Kingdom	0	0	1	0	0	1
France	0	1	1	2	0	4
Italy	0	0	5	0	0	5
Spain	0	0	2	2	1	5
Poland	0	0	4	1	0	5
Romania	0	2	0	0	0	2
The Netherlands	0	0	0	1	0	1
Belgium	0	0	0	2	0	2
Greece	0	1	3	2	0	6
Czech Republic	0	0	4	0	0	4
In total	0	5	20	13	2	40

One of the criteria used to analyze the achieved results may be the broadly understood level of development of individual countries. Chronologically, the most recent approach to strategy, the network approach, is represented to a small extent by the energy sector organizations under study. This may result from a lack of knowledge or awareness of operating in network structures and conditions by individual entities of modern business. Additionally, the aversion to declaring potentially unrecognized concepts as key values for the strategy of a particular organization may in this case constitute a real barrier to the popularization of this approach. However, it is represented by two of the analyzed companies, which conduct their activities in advanced economies (Germany and Spain).

In addition, the innovative and entrepreneurial approach to strategy is mostly represented by such economically advanced countries (e.g., Germany, France, Spain, Belgium, The Netherlands). It is worth using specific rankings to organize considerations. An example of such a ranking may be the World Competitiveness Ranking prepared by the International Institute for Management Development (IMD), which is primarily based on the categories of innovation, digitalization, welfare benefits, and social cohesion ranks in particular countries, comparing their overall competencies in achieving long-term value creation [95]. Indications for particular countries, according to the mentioned World Competitiveness Ranking, are presented in Table 4.

Table 4. Position of considered countries in the World Competitiveness Ranking.

	The Netherlands	Germany	United Kingdom	Belgium	France	Czech Republic	Spain	Italy	Greece	Poland	Romania
2021 position	4	15	18	24	29	34	39	41	46	47	48
comparison to 2020	no change	+2	+1	+1	+3	−1	−3	+3	+3	−8	+3

Source: [95].

The resource-based approach to strategy, due to its highest frequency of occurrence, is represented by European countries that are diverse in terms of development. It is worth noting, however, that most of the indications in this area are given by countries that occupy lower positions in the aforementioned International Institute for Management Development (IMD) ranking in Europe. This is the case for Italy, Greece, and Poland, for which a total of 12 out of 20 indications were noted in the strategic documents of individual companies under consideration. It is also worth emphasizing that the high total number of references to resource issues may be related to a good, firmly rooted recognition of these categories, both in the scientific area and in business practice.

The positional approach, in turn, in several cases was found to be dominant both among companies from countries considered to be among the most developed (Germany), but also among entities operating in countries not belonging to the European economical top rank (Romania). This may prove the universality of strategy consideration in the already very well-established concept of the systematic building of position and competitive advantage in the environment of the energy sector organization.

What is slightly surprising is the lack of identification of expressions of the planning approach in the strategic materials of the surveyed organizations. Some justification for this may be the complete absorption of this approach by other approaches as an integral set of distinctions and guidelines. In such a situation, the concept of strategy as a long-term plan of action, of course, does not have to be negated, and in principle is recognized as a natural and basic feature of all other approaches.

The indicated results of the conducted desk research analysis, despite the observation of significant and clear conclusions, may seem somewhat blurred and ambiguous, which the authors of this study are aware of. Increasing the precision of indications would require extending the research scope, both in terms of geographical range (subsequent countries included in the analysis), as well as increasing the research sample. However, there are clear barriers in this case, primarily in the form of a limited number of corporations from the sector under consideration, which is related to the specificity of the activity and significant initial requirements for its initiation.

The relatively popular recent criterion of the use of fossil fuels compared to renewable energy sources also does not provide a clear dividing key in the case under consideration between the strategy approaches used by the organizations under study. Data on this issue for 2019, presented in Table 5, confirm that the current use of fossil fuels (as a share of total energy demand and gross available energy) in almost all countries considered clearly exceeds 72–73%. A significantly lower indicator is shown in this case by France (level of only 49.63%). However, for this country, no exceptionally different approach to the strategy was identified. On the basis of the analysis carried out, it was concluded that the French energy companies under consideration show quite diverse inclinations in this respect, presenting elements of positional, resource, or innovation–entrepreneurial approaches in their strategy documents. At the other end of the scale is The Netherlands (with a level of use of fossil fuels currently at 92.4%). One company reviewed for this country was found to be dominated by an innovative and entrepreneurial approach to strategy. The Netherlands itself is seen as one of the most developed countries in the world (according to the previously presented World Competitiveness Ranking by IMD, with the fourth position in the global scale, which should be considered as really outstanding).

In addition, it is worth analyzing the scale of total energy supply in each of the countries analyzed, as the share of a particular type of energy in total consumption is a relative value and may be unreliable. The analysis of Table 6 shows that for the countries with the largest total energy supplies (in 2019): Germany (almost 3.5 million Gigawatt hours), France (2.85 million GWh), United Kingdom (1.98 million GWh), Poland (1.19 million GWh), or Italy (1.76 million GWh), there is a whole spectrum of approaches to strategies in line with the adopted differentiators. Similarly, for the countries with low energy supply (2019): Greece (only 260.76 thous. GWh), Romania (384.4 thous. GWh), or Czech Republic (495.17 thous. GWh), there is a wide variation in the adopted research sample.

Table 5. Share (%) of fossil fuels in gross available energy.

Country/Year	2012	2013	2014	2015	2016	2017	2018	2019
European Union-28 countries (2013–2020)	75.66	74.83	73.69	73.73	74.00	74.07	73.36	72.36
Euro area-19 countries (from 2015)	74.26	73.48	72.35	72.82	73.19	73.44	72.59	71.67
Belgium	75.45	74.98	76.35	78.90	74.62	75.22	79.05	75.58
Czechia	76.97	75.97	75.00	76.24	77.25	75.97	75.15	73.59
Germany	81.51	82.01	81.32	81.46	82.26	82.22	81.35	79.81
Greece	90.99	89.16	87.38	85.83	86.36	86.99	85.86	84.56
Spain	77.29	75.00	73.99	75.47	74.24	75.97	75.20	74.14
France	51.44	50.95	48.97	49.25	50.29	50.89	49.27	49.63
Italy	83.47	81.32	80.05	80.81	81.34	80.18	79.30	79.26
The Netherlands	93.63	93.78	93.49	93.67	94.01	93.93	92.85	92.40
Poland	91.36	91.58	90.57	90.50	90.97	91.21	90.95	89.60
Romania	76.50	73.99	73.31	73.89	73.07	74.08	74.13	72.88
United Kingdom	87.73	86.34	85.21	82.88	82.49	81.72	80.93	79.97

Source: [96].

Table 6. Total energy supply (Gigawatt hours, GWh) in analyzed EU countries.

Country/Year	2012	2013	2014	2015	2016	2017	2018	2019
European Union-28 countries (2013–2020)	19,224,084	19,012,442	18,286,601	18,545,240	18,633,766	18,924,096	18,757,283	18,409,000
Euro area-19 countries (from 2015)	13,585,842	13,474,859	12,955,422	13,156,963	13,201,076	13,394,572	13,206,699	12,970,036
Belgium	624,268	650,421	613,135	611,763	648,135	645,423	621,887	640,497
Czechia	499,492	501,981	485,202	485,637	480,821	501,342	502,753	495,170
Germany	3,668,575	3,749,984	3,588,473	3,606,259	3,621,710	3,633,969	3,547,578	3,470,406
Greece	309,403	272,084	270,011	270,568	264,883	272,235	264,566	260,756
Spain	1,456,625	1,360,061	1,330,591	1,382,227	1,395,918	1,467,576	1,462,923	1,419,784
France	3,015,694	3,031,666	2,913,078	2,959,547	2,907,522	2,907,611	2,894,374	2,853,153
Italy	1,876,388	1,807,187	1,706,934	1,774,311	1,755,918	1,815,367	1,781,190	1,761,528
The Netherlands	897,785	879,455	830,139	844,824	862,212	870,812	853,243	836,899
Poland	1,131,066	1,139,408	1,095,992	1,107,401	1,161,829	1,213,881	1,231,309	1,188,539
Romania	405,322	368,700	364,934	367,900	366,396	386,100	389,079	384,402
United Kingdom	2,220,056	2,182,232	2,054,230	2,093,441	2,062,805	2,030,282	2,023,904	1,983,384

Source: [97].

The criterion of alignment with specific strategic approaches can also be adopted as the degree of internal national regulations supporting or hindering the efficient development of the energy sector. In Figure 3, some comparisons between analysed countries were presented (the higher the score, the more favorable the regulations), on the basis of which certain discrepancies can be observed already in the internal perspective (scale of the domestic market). Based on this criterion, however, it is difficult to identify a reproducible key for matching the strategies of companies from individual countries with selected strategy approaches.

Figure 3. Comparing “GCI 4.0: Energy efficiency regulation” indicators with “GCI 4.0: Renewable energy regulation” indicators in analyzed EU countries in 2019: (a) GCI 4.0: Energy efficiency regulation indicators—assessments for chosen countries’ policies and regulations for energy efficiency energy promotion (0—means “not conducive: 100—means “very conducive”); (b) GCI 4.0: Renewable energy regulation indicators—assessments for chosen countries’ policies and regulations for renewable energies promotion (0—means “not conducive: 100—means “very conducive”). Source: [98,99].

The last of the criteria selected by the authors of this article for matching the strategies of the surveyed companies to specific strategic approaches is differentiation in terms of the “Energy Transition Index” (ETI) indicator, prepared by the World Economic Forum. This factor is based on previous analyses from the “Global Energy Architecture Performance Index” series, but, in this case (focusing on comparisons of 115 countries), the perspective aspect of the real readiness of a particular country to implement the energy transition was added, taking into account the actual level of the energy systems’ performance, and the current readiness of the macro environment for the transition to a stabilized, secure, sustainable, and affordable energy system of the future [100]. This indicator is presented in Table 7. The higher the value of the indicator, the better prepared the energy sector in a given country is for the challenges of the future. The ETI indicator provides a good basis for comparison in the context of ongoing changes in the Industry 4.0 perspective. The 11 countries selected for the study by the authors of this article were arranged in two categories, Emerging and Developing Europe (with only Poland and Romania indicated here) and Advanced Economies (the rest of analyzed countries).

Table 7. Position of considered countries in the perspective of Energy Transition Index, ETI.

	United Kingdom	France	The Netherlands	Belgium	Germany	Spain	Italy	Romania	Czech Republic	Greece	Poland
2020 position	7	8	9	18	20	24	26	35	42	59	69
Transition readiness	68%	64%	68%	64%	64%	59%	56%	52%	56%	47%	48%

Source: [101].

The analysis of the results generated in the course of the desk research procedure described above clearly indicates the difficulty of unambiguously attributing the strategies of the surveyed companies to specific strategic approaches (adopted on the basis of the characteristics indicated in Table 1 in Section 3 of this paper. This is because it is extremely difficult to determine authoritative criteria (from among the following considered: general level of competitiveness of a given economy, share of fossil fuel use in total energy use, size of energy supply, energy efficiency regulation levels vs. renewable energy regulation levels, Energy Transition Index, ETI).

6. Discussion

Enterprises are an integral part of the external and internal conditions that determine their development, which in turn depends on introducing positive strategic changes allowing for adaptation to the changes taking place. Strategic management is also subject to transformations resulting from different views on its essence, e.g., methodological, axiological, or epistemological. The result is the emergence of new approaches, schools of strategy, and an attempt to organize and classify them, confirming the complexity and multidimensionality of this problem. As noted [102], having a wide range of different approaches to strategy, the company's management can choose the one that best suits the company's specificity and its environment. The desire to maintain the development potential and competitiveness in the long term forces the perception of the strategy as a dynamic process of overcoming difficulties and/or taking advantage of opportunities. Thus, the energy transformation, conditioned by several factors, may affect the change of companies' strategy from the energy sector and, consequently, the choice of methods of operation assigned to the main strategic trends.

The analytical approach used in the paper has allowed for conducting a study of the strategies in the European Union's energy corporations' during the period of sector transformations, aiming to identify the strategic features of these companies. Empirical research also allows for the unambiguously negative verification of the article's hypothesis "the strategies of energy producers are evolving towards innovation strategies". The results of this study have several potentially significant observations.

Firstly, the European energy sector companies declare in the formal strategic documents and the implemented system of strategic goals, that the companies' approaches are primarily determined by the resource-based (50%), as well as the innovative and entrepreneurial (32.5%) schools, meaning that these schools are well-known and well-established, in theory and in practice. This implies that managers of this sector should pay particular attention to the activities in these areas.

Secondly, the positional approach to strategy was found in 12.5% of organizations and the network approach to strategy in only 5% of them. Our research shows that the presence of the positional approach proves its importance in building a strategy that takes into account the achievement of competitive advantage in the sector.

However, the network approach, which is the most recent approach to strategy, has been represented to a small extent by the energy sector organizations under this study. In light of the obtained results and theoretical indications, the low popularity of the network approach to strategy may be related to it being a relatively new one. However, the importance of this approach is indicated by studies [103,104]. Nevertheless, [105] notes that management strategies with respect to a networked organization are chosen based on an assessment of access to critical resources and competencies, and in the context of internal and external relationships with other network participants and requires activation of all network participants, exploiting the combined potential and enhancing the cohesion.

The last significant observation concerns the lack of the planning approach to strategy, as no implementation of it was found in studied entities. It may be that this approach was absorbed by others as an integral set of its distinctions and guidelines, as well as the diminishing role of planning, the lack of unambiguous references in the analyzed documents, or a shift to resource-based/innovative strategic approaches, which would be

a manifestation of a new way of thinking and a response to changes. However, there is research emphasizing the importance of planning as a strategic approach in the energy sector [28]. Overall, we believe that the strategies of the surveyed companies will continue to develop, and that the innovative and entrepreneurial strategies and inter-organizational relations, especially in network systems, will become particularly important. Hence, the indications are to continue research taking into account these essential areas.

The conducted analytical procedure was based mostly on the appropriate understanding of the statements included in the documents and descriptions of a strategic nature presented by the researched organizations, and assigning them to particular approaches to strategy on the basis of the adopted set of distinctions presented in Table 1. The subjectivity of the realised assessment clearly affected the meaning of the quality of semantic analysis, also significantly conditioning the obtained results. In order to increase the objectivity of the analytical apparatus used, in the future it would be advisable to consider further formalising the assessment procedure and perhaps introducing the principle of parallel assessment of strategic materials by the research team in relation to individual organizations, with an assumed discussion until a consensus is reached. The obvious disadvantage of such an assumption is that it significantly increases the time-consumption and complexity of the planned procedure.

7. Conclusions

The conducted research proves that the dominant strategy of energy companies located in the European Union (40 examined entities) is the resource-based approach. This conclusion allows the rejection of the hypothesis formulated in the article that the strategies of energy producers are evolving towards innovation. This is all the more surprising as, in the face of changes caused by the evolution of energy policy, they should focus on applying innovative solutions and not building the organization's value in terms of economic value. This situation most likely results from the implementation of operational goals, which are focused on implementing innovative solutions, but a consistent description of the strategy in the language of resources.

Changes in energy companies are tangible and visible; after all, they include product, technological, and process solutions that are highly innovative. Such solutions include economic energy installations, the construction of wind and photovoltaic farms, energy storage, and others, with the general purpose of decarbonizing the natural environment. Their implementation is possible due to energy companies' resource concentration in the European Union. This means that focusing on the value generated by human, financial, material, and information resources is still a guarantee of stable growth and strategic development. However, this assumes potential differences in operational goals of various energy companies, considering changing nature of these resources in particular entities.

Based on the analytical procedure described in this paper, frequently occurring words and terms were selected from the strategic materials developed by selected companies in the European energy sector. This set of key words is presented in Figure 4 and can serve as a prelude to further, extended semantic analysis including extended sets of key words to precisely match specific strategic documents, missions, visions, values, and goal systems with specific strategic approaches.

Figure 4. Description: (a) Word clouds of words and expressions words that appeared at least 5 times; (b) Word clouds of words and expressions words that appeared at least 10 times (source: own elaboration with the use of “WordItOut” [106]).

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