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Identification of the Strategy of the Energy and Utilities Sector from the G7 Group Countries, from the Perspective of a Dominant Strategy Approach

Jerzy Niemczyk [1], Kamil Borowski [2,*], Rafał Trzaska [1], Mateusz Trzaska [1], Aleksandra Sus [3] and Maciej Matuszewski [1]

[1] Department of Strategy and Management Methods, Faculty of Management, Wroclaw University of Economics and Business, Komandorska 118/120, 53-345 Wrocław, Poland
[2] Independent Researcher, 01-063 Warsaw, Poland
[3] Department of Management, General Tadeusz Kościuszko Military University of Land Forces, Piotra Czajkowskiego 109, 51-147 Wrocław, Poland
* Correspondence: kamil.borowski.1992@gmail.com

Abstract: The aim of the research, the effect of which is this article, is to identify the hierarchy of selected approaches to building a strategy in companies from the sector of Energy and Utilities included in seven stock market indexes of the G7 countries The obtained results are related to the isolation of cognitive knowledge about the preferred approaches to the strategy in energy companies currently undergoing intensive changes and that are listed in the stock indexes of the G7 countries. The Authors proved that the strategy implementation in companies representing Energy and Utilities sectors is mainly based on the resource approach. Moreover, such an approach is supported by the classic tools of the positional school, resulting in shaping the competitive position in the sector of differentiating the Chamberlin's rent.

Keywords: strategic management; approaches to strategy; enterprise strategy; G7 group

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1. Introduction

In the opinion of the authors of the research, the theoretical concept of approaches to strategy (strategy paradigms) may constitute a universal interpretation of the logic of creating and implementing a strategy in an enterprise. Adopting the premises of a specific approach, naturally after diagnosing the context of a given enterprise's operation, allows a strategy to be built in a coherent, logical manner, guaranteeing its filling with non-contradictory solutions, and, most importantly, leading unequivocally to specific goals. This applies to both the strategic analysis phase and the strategy implementation processes. Detailed analysis of the strategy may determine the identification of effective benchmarks as well as development paths of modern organizations. This fact is of particular importance in the context of the degree of dispersion of the current knowledge about the strategy. Hence the difficulties in its practical use and frequent criticism from biased practitioners. In this research, based on the analysis of several dozen companies in the energy sector, an attempt was made to indicate the logic of the development of the energy companies' success strategy. The knowledge obtained in this way will cognitively expand strategic management as well as its practical usefulness, constituting both a scientific and a utilitarian goal of the study. In turn, the aim of the research, which has inspired this article, is to identify the hierarchy of selected approaches to building a strategy in companies from the Energy and Utilities sector included in the seven stock market indicators of the G7 countries.

It is important to emphasize that the research is a continuation of the empirical explorations described in the article entitled 'Strategies of European Energy Producers: Direction of Evolution' [1]. That publication inspired authors to explore the research further,

most notably the concept of distinguishing five main strategic strands. Nevertheless, this article points to slightly different strategic distinctions, namely the different rents attributed to the different schools of strategic thought. They are analyzed from this point of view in the presented paper.

The subject of the research analysis are capital companies of the Energy and Utilities sector listed in the main stock exchange indexes of seven countries from the G7 Group (the largest of the developed and democratic economies according to the International Monetary Fund), i.e., in the following indexes: Dow Jones Index USA (30 companies), DAX Germany Index (40 companies), FTSE Index United Kingdom (100 companies), CAC Index France (40 companies), FTSE MB Index Italy (40 companies), Nikkei Index Japan (225 companies) and S & P/TSX Composite Index Canada (250 companies). For the research, there were selected 30 companies from each index according to the criterion of the company's value measured by the value of share capital.

The research used the framework of the critical literature review, the methods of deduction in the area of generating the assumptions of the schools of strategy, the method of analysis referring to the "grey" interview and selected tools of statistical analysis. The research method used desk research class analysis, including reports from listed companies in the part concerning investor relations. The obtained results are related to the isolation of cognitive knowledge about the preferred approaches to the strategy in Energy and Utilities, which are currently undergoing intensive changes, in companies listed in the stock indexes of the G7 Group countries. This will allow the identification of success paths of these companies and will enrich knowledge about the strategies of large, global organizations. The results will be used to identify effective pathways, including approaches to the strategy of global companies with a high degree of capitalization, competing globally in a dynamically changing environment. The authors hope that this will also broaden the pragmatic dimension of the strategy paradigms.

The G7 countries accounted for approx. 31% of global GDP in 2020. Although it is estimated that this share will drop to 28.8% in 2026 [2,3], it is still such a significant share that it may constitute an interesting subject of research in strategic management. Despite the 9.57% share of the population (approx. 780 million), these countries generate 31% of the world GDP.

Additionally, given the current status of those developed economies, they act as the "pioneers" of the current clean energy transition. Statements released by G7 countries in 2022 emphasized further commitments in the power sector [4]. In the academic field as well, G7 economies are a significant area of interest: the role of economic complexity on environmental sustainability [5–7], roles of nuclear energy, renewable energy, and economic growth [8,9], financial globalization [10] or R&D on energy-related technologies [11].

It is no coincidence that these companies and these countries can serve as a model in building a strategy for a specific type of company. In the authors' opinion, the study analyzed the most important representatives of the energy sector companies listed on the stock exchange in the G7 countries, i.e., the largest of the developed and democratic economies according to the International Monetary Fund. This criterion was a key aspect in maximizing the chance that the strategy-building process was influenced by a minimum number of political factors (for example, in non-democratic countries). In addition, due to the similar development status, they can be compared with one other, and the survey results will not be distorted by factors resulting from differences in the development of economies. It is not uncommon for G7 countries' decisions and their political guidelines set by leaders on a specific topic to trigger a so-called domino effect in many other international organizations and institutions. Similarly, it can be assumed that the largest companies of the G7 countries, with their actions and the adopted strategy, may have a domino effect in their sector at the global level, setting the direction of changes. This is another advantage of selecting companies from this research sample.

The subject of the analysis for these studies are capital companies of the Energy and Utilities sector listed in the main stock exchange indexes of the seven most important

economies in the world (the so-called G7 Group), i.e., in the main stock indexes of the Group's countries: Dow Jones Index USA (30 companies), DAX Germany Index (40 companies), FTSE Index United Kingdom (100 companies), CAC Index France (40 companies), FTSE MB Index Italy (40 companies), Nikkei Index Japan (225 companies) and S & P/TSX Composite Index Canada (250 companies). This guarantees the analysis of companies of a specific type, i.e., global companies, companies that are the most valuable in the world economy (except mainly Saudi Aramco and selected companies in China and Russia) operating in countries with democratic principles of management, and separated according to a specific sector classification.

In the first part of this paper, the Authors present the research foundations. The selected approach to the strategy is described, supported by literature review. The scope of the research is clarified—the detailed definitions of the Energy and Utilities sectors. The next part of the article includes the description of all stages of the research method and details of the research sample. Then the Authors present the research results referring to the hypotheses tested. The article is summarized with the conclusions and the discussion of the results.

2. Selected Approaches to the Strategy by Enterprises from the Energy and Utilities Sector—Identification of Research Foundations

The mainstream of research in strategic management is strategy, understood as a specific planning formula, an element of a larger undertaking, which is the process of strategic management, striving to achieve the set-up goals of the organization [12]. The evolution of strategies is most often presented in the literature through the prism of specific classification criteria, i.e., those factors that take the lead in particular periods, creating the so-called strategic management paradigms [13–16]. Table 1 lists the descriptive categories of approaches to the strategy. These approaches largely meet the requirements of scientific paradigms, i.e., reality-interpreting views shared by a specific group of scientists. The approaches indicated in Table 1, in the opinion of the authors, meet the expectations formulated around paradigms, i.e., they allow the logic of the strategy to be interpreted in a specific group of foundations. In the opinion of the authors of these five approaches, they also create a chronological system of paradigm development, evolving along with changes in the environment and the development of scientific thought.

The following sector's definition has been used, based on the Global Industry Classification Standard (GICS®) as:

- Energy Sector: it includes companies engaged in energy-related activities like exploration and production, storage and transportation, refining and marketing and of oil and gas and coal and consumable fuels. Moreover such sector also includes companies offering oil and gas equipment and services;
- Utilities Sector: it includes utility companies providing services such as electric, gas and water utilities. Moreover such sector also includes independent power producers, companies engaged in generation and distribution of electricity using renewable sources and also energy traders.

Entities operating in the Energy and Utilities segment compete on a specific market characterized by, among others, homogeneity of the product, significant entry barriers, conditioned by the capital intensity of the sector and specific legal regulations. Due to the strategic nature of the final product, both for the recipient (individual) and at the level of a given country (the importance of energy and energy resources for industry and the entire economy), this sector is of great economic, managerial, and geopolitical importance. Interruptions in the supply of oil or electricity may result in a reduction of the industrial potential of a given country. The oil crisis was significant in generating high global inflation in the 1970s [17]. Nowadays, we also see a visible and extremely significant impact: The increases in the prices of energy commodities as well as energy itself in 2022 are among the key aspects of the growth of inflation in Europe.

Table 1. Cognitive premises of approaches to strategy selected for the research.

Selected Approaches to Strategy	Name of the Strategy Approach	Basic Cognitive Assumptions of Selected Approaches to the Strategy	Keywords for Selected Approaches to the Strategy
Classic approaches to strategy (1950–2008)	planning	The implementation of the Ricardian rent. The guideline for action is to focus on the economies of scale and scope.	economy scale, Ansoff
	positional	The implementation of the Chamberlin's rent. The guideline for action is to build the structure of market shares in order to take a privileged competitive position.	industry analysis, Porter, portfolio, matrix, value chain
	resource	The implementation of the Ricardian rent. The guideline for action is to build value for shareholders based on the RBV on the basis of a bundle of key competencies.	Resources Based View, core competencies, competencies
Modern approaches to strategy (2008–2020)	innovative	Realization of the Schumpeter's rent. The guideline for action is to focus on breakthrough innovations also achieved in open innovation systems.	Schumpeter, disruptive innovation, open innovation
	network	The realization of the rent resulting from the network effect. The guideline for action is to build a network of dependencies in a way that allows for synergy.	network, network effect

Source: own extended elaboration of the proposal contained in: (Pieniacka, Organa, Niemczyk, in press) and also: [1].

In response to external conditions as well as trends in the industry and the internal characteristics of entities in the Energy and Utilities sector, various schools of strategic management are used in the process of building a strategy, which also means the use of various methods in building a system of goals, missions and visions of the analyzed organizations.

According to E.H. Bowman, corporate strategy is based on a constant search for rent [18]. The assumption of the planning paradigm, the classic approach to strategy, is the implementation of the Ricardian rent and orientation towards the economy of scale and scope (Table 1). In the planning approach, the strategy is a long-term action plan, where the process of its formulation is based on the analysis of the company and its position in the environment. The forecasting process is of particular importance, where, starting from defining the premises, a strategy is created and long-term goals are set [19]. Implementation takes place through detailed programs, budgets, or operational plans [20]. In the case of the strategy of companies in the sector, in terms of the planning paradigm, the strategy may have a long-term perspective, a significant reference to capital expenditures and investment schedules of ongoing projects and assets (e.g., coal or nuclear power plants), and elements of market scenario analysis in which the company operates. In the Energy and Utilities industry, one of the key studies is World Energy Outlook [21], which analyses the long-term prospects of the sector (until 2050), taking into account market development scenarios and the pace of changes in the energy transformation. The investment process in the industry requires a long-term perspective [22], e.g., in the case of a nuclear power plant (considered to be one of the most engineered and cost-intensive investments in the world), investment preparation time is measured in decades, while the construction period itself is usually several years [23]. In the Energy and Utilities sector, economies of scale may also be noticeable, translating into an increasing scale of production from assets (e.g., mining assets in the oil and gas industry or the power of wind farms in the utilities sector) in order to reduce operating costs and build a competitive advantage.

The planning paradigm focuses on the influence of external factors on the functioning of the individual. As part of the process of assessing the impact of the macro-environment on the enterprise, PEST analysis is employed (P—Political, E—Economic, S—Social, T—Technological). In the extended version of PESTEL, the analysis also takes into account environmental and legal issues (E—Environmental, L—Legal). The analysis aims to indicate the key spheres of the environment that affect the entity's operations. It is used, among others, in the process of formulating long-term plans and identifying macroeconomic opportunities and threats in the SWOT analysis.

Focusing on achieving a competitive advantage is, in turn, the essence of the positional approach, where strategy is defined as the competitive position of the organization on the market. The positional paradigm refers to the implementation of the Chamberlin rent, where entities focus on building a market position. The positional theory in the process of building the strategy, which developed along with the works of Michael Porter, focused on the position of the company on the market and, above all, its position in relation to competitors. Falciola, Jansen and Rollo define the building of competitiveness by fulfilling three criteria: meeting customer needs (in terms of quantity, quality, or delivery time), acting in a sustainable manner (adapting to environmental changes), and constantly obtaining information about the market [24]. As part of the strategic analysis, the analysis of Porter's five forces is used: the bargaining power of buyers, competition within the sector, the threat of the appearance of new producers, and the threat of the appearance of substitutes. With regard to Porter's five key forces and the Energy and Utilities sector, it seems that two aspects may be of key importance in the strategy building process: customer interaction and competition in the industry. The impact of end users is significant where both oil and electricity demand is a key determinant in the process of setting market prices. In the case of oil, this is transferred to the world markets; in the case of electricity, it is limited locally by connecting the distribution network and the possibility of transmitting energy between certain regions. Homogeneity of the product may translate into a high level of competition between entities operating in the Energy and Utilities sector, which must compete in efficiency and production costs. On both the oil and electricity market, it may be important to position a given entity on the cost curve (or the location of assets on the cost curve within its portfolio of projects), where producers with lower costs may displace competitors with increased production costs, found in the last deciles of the cost curve.

In line with the Resources Based View approach, enterprises create a competitive advantage by building and effectively managing resources that other companies on the market do not possess [25]. The paradigm is characterized by the implementation of the Ricardian rent; however, unlike the planning approach, the guideline for action is to build shareholder value on the basis of competencies. In line with the resource concept, the success of an enterprise is determined by its strategic potential in the form of appropriately selected and highly competitive resources as well as the company's ability to protect and use them effectively. However, in order for resources and competencies to become a tangible source of competitive advantage, they should be valuable, rare, difficult to imitate, and well-organized (Barney's VIRO model), as well as flexible and unappropriated [26]. The Resources Based View (RBV) approach has gained strong foundations both with regard to organization theory [27] and management strategy [28]. According to the RBV paradigm, basic resources, strategic assets, and competencies are the most important factors influencing the survival and development of a company [29].

By creating a strategy in the resource approach, entities operating in the sector can significantly relate to value creation, e.g., through the ability to find and exploit unique resources. Companies in the oil and gas production industry compete with one another for the availability of the largest deposits (presented in BOE—barrel of oil equivalent units) and with the lowest production costs. Moreover, the know-how, including knowledge and experience concerning the possibility of exploiting a deposit with a given characteristics (e.g., deep under the ocean floor or in the form of shale gas or tar sands) is also of key importance. In the oil and gas industry, one of the key motives for acquisitions is the

purchase of new resources [30], as well as access to new technology and expansion into new geographic regions [31]. In the utilities industry, knowledge translating into organizational efficiency and thus lower operating costs may also translate into lower prices for end customers [32].

Political and legal factors are becoming more and more important in the Energy and Utilities sector in Europe, where the attention of decision-makers is focused on ensuring the continuity of electricity and energy resources supplies in the face of supply shocks caused by the armed conflict in Ukraine. The role of regulators appears in ensuring energy supply as well as in determining appropriate tariffs and prices for individual end users, in the balance of economic conditions—between the maintenance of economic growth, the environment of high inflation, and the profitability of the Energy and Utilities sector.

Regarding the social impact on actors in the sector, dependence on fossil fuels is currently a major concern for investors and sector stakeholders, as the burning of fossil fuels poses challenges to society due to climate change [33]. The social responsibility of energy companies is a major business initiative which helps to cope with the main threats and ensure sustainable energy development due to the impact that energy company industries have on the climate, on local communities, and on the entire economy [34].

The New Green Deal in Europe, which assumes the achievement of a zero net greenhouse gas level, translates, among others, into the development of innovation in the sector and the emphasis on the expansion of RES generation capacity. Replacing fossil fuel-based power with renewable energy reduces greenhouse gas emissions [35]. On the other hand, RES generation capacities are more variable energy sources, which can be managed by maintaining classic power sources, developing energy storage or the power grid [36]. The New Green Deal may also have an impact on the Emission Trading System (ETS) [37] and have geopolitical consequences, as European Union countries should build relationships with external partners to provide sources of alternative energy (e.g., hydrogen) or critical elements that could be imported into Europe [38]. For the countries of the European Union, as part of setting individual targets, it is necessary to consider the starting situation of each country. An important element of the European Union's climate and energy policy, and currently the greatest challenge, is the EU's solidarity and external policy towards external countries, especially energy suppliers [39]. The current turmoil on the energy market, caused by the armed conflict in Ukraine, may translate into a delay in the changes taking place on the market and affect those changes as part of the energy transformation aimed at reducing the emissions of the sector.

Classic approaches to strategy are characterized by the realization of the resource and monopoly rent. In response to external conditions, the guideline for the activities of entities in the sector may be included in the modern approach to strategy, innovation orientation and the implementation of the Schumpeter rent, or the implementation of the rent resulting from the network effect.

In the case of the classic approach, the focus was primarily on planning and building a competitive advantage on existing markets. The innovative approach tries to answer the question of how to create a product or create a market that does not exist yet. The innovative paradigm in the process of building a strategy is based on the creation of a new product, different from the one offered by the competition, the creation of a new customer access channel, or the development of a market niche that has never been used before. For decades, companies operating in the energy sector have been using new technologies to improve the effectiveness of strategic decisions related to resource exploitation or infrastructure construction [40]. As part of the development of the industry, the innovations concerned, among others, seismic research [41] or the development of the technique of horizontal drilling. Currently, one of the answers in the field of innovation in the Energy and Utilities industry, as well as an option to build a competitive advantage in the sector, is digitization. The digitization process plays an important role in achieving efficiency for specific goals of modern enterprises in the energy sector [42].

The essence of the network paradigm involves building long-term relationships between participants (customers, suppliers, or competitors) in order to build an ecosystem of dependencies. Directional research on interorganizational networks shows the benefits of the participation of companies in the network and of gaining a competitive advantage in the industry thanks to the network. The school of networks pays special attention to coopetition between entities, in which enterprises competing with each other on a daily basis join forces and cooperate. The distinguishing features of value creation under coopetition are: improving the competitive position of the enterprise, increasing the size of currently served markets, increasing resource efficiency, or creating new markets [43]. In the case of electricity production, entities can naturally expand their operational activities to the components of the ecosystem within the energy network: from raw material suppliers to production assets (e.g., in the field of gas, coal or RES), distribution within transmission grids, power exchange, energy storage, etc. Strategically, they can expand through bilateral agreements with the end customer (e.g., through PPA contracts), or as part of alliances aimed at innovative works [44] or joint venture agreements to implement a project in order to build a production asset.

The abovementioned approaches to building a strategy fulfil the premises adopted in the research concerning the identification of key approaches to the strategy in the analyzed companies of the energy sector.

Additionally, evidence described in the literature suggests that, given the nature of the Energy and Utilities sectors (those sectors are often described as "strategic sectors" due to their key importance for the economy or for the country itself and its citizens), special attention should be given to long-term planning, to ensure sufficient production and distribution of the energy [45]. This is even more important, as the Energy and Utilities companies should adopt strategies taking into account the long-term plans of the development of the cities [46] and industries consuming the most energy [47,48], as well as forecasts of the energy consumption [49–51]. Long-term planning is also visible in the countries with rich energy resources (UK [52], China [53] or Iceland [54]). Moreover, after the 2016 Paris Agreement, companies operating in Energy and Utilities sectors also compete with each other on new grounds: the strategic transformation of their business models and the move to green energy [55–57]. This is especially important for the innovative, the technology-driven and the most industrialized economics [58–61].

The result of this analysis is the formulation of the following research hypotheses:

Hypothesis 1. *In the research sample relating to the Energy and Utilities sector, the planning and positional approaches to the strategy dominate in the first choice;*

Hypothesis 2. *In the research sample relating to the Energy sector, the first choice is dominated by the planning and positional views of the strategy;*

Hypothesis 3. *In the research sample concerning the Utilities sector, the first choice is dominated by the planning and positional approach to the strategy;*

Hypothesis 4. *The more abundant in energy resources the country, the more the classic approach to the strategy dominates in the analyzed sectors (research sample);*

Hypothesis 5. *The greater the share of green energy in a given country, the more network and innovation dominate in the analyzed sectors (research sample);*

Hypothesis 6. *Companies that achieved a higher increase in stock market capitalization in the last five years use modern approaches (innovation-entrepreneurial approach and network approach) to strategic management.*

The first choice of a strategy means that the leading strategy based on the desk research analysis is a strategy focused on the foundations of a given school of strategic management.

On the other hand, the second choice means that when identifying the leading strategic school, it is also possible to identify features of another strategic school in the conduct of the enterprise. They do not have the same intensity of features as the main school, but they are also noticeable in strategic activities of the organization and its features. In the case of the analysis, the choice of the strategy means that the given features of the strategies that were identified during the survey of desk workers are characterized by specific descriptions of the behavior of enterprises, the market, and the surroundings in the area of a given strategic school (Table 1).

In the following parts of the article, the adopted hypotheses were verified, which also allowed for inference and implementation of the adopted research, scientific and utilitarian goals.

3. Description of the Research Method and Research Sample

The following research methods were used in the research on identifying the hierarchy of selected approaches to the strategy among 25 companies in the Energy and Utilities sector from the list of 210 companies present in the stock exchange indexes from seven countries around the world (G7 Group): strategy, the method of analysis referring to the "grey" interview in the part concerning the collection of empirical data and selected tools of statistical analysis [62]. The research method used desk research class analysis, including reports from listed companies in the part concerning investor relations and official materials (e.g., presentations, reports and statements of management boards) published by companies i.e., public declarations made by the companies. Therefore, a triangulation of research methods was applied with the aim of obtaining a high degree of research reliability. The subject of the research was the identification of strategic distinguishing features of the analyzed organizations, which indicated one of the five identified strategic paths, i.e., planning, positional, resource, innovation-entrepreneurial and network paths.

The research procedure consisted of the following stages:

1. Formulation of the main goal of the study. The aim of the research, the effect of which is this article, is to identify the hierarchy of selected approaches to building a strategy for 25 companies in the energy producer sector selected from among 210 companies from the list of seven stock exchange indicators from seven indicated countries of the world (G7 Group) (Industrial Dow Jones Index USA, DAX Index Germany, FTSE Index United Kingdom, CAC Index France, FTSE MB Index Italy, Nikkei Index Japan, and S & P/TSX Composite Index Canada). The purpose of the study was prepared by the research team;
2. Selecting the research subject based on the research premises. Twenty-five companies from the Energy and Utilities sector listed on public stock exchanges of the seven most important and economically democratic countries in the world were selected for the study. The indexes of these seven countries contain a larger number of companies. For the study, 210 companies were selected according to their stock market value, and from that list companies from the Energy and Utilities sector were selected. This way, there was guaranteed data of relevant companies in a given sector. This, of course, did not include companies from the countries of Saudi Arabia, China, Russia, etc., not classified by the IMF among the G7 countries. However, thanks to such a selection, we will receive a list of companies subject to the rigors of the market and subject to the rigors of functioning of economies described by the democratic dimension of economic freedom. Selection of companies was made by a research team and presented in the Table 2.
3. Selecting (parameterizing) the criterion for classifying the subject of the study, related to the five approaches (rents) of strategy building, established in the research premises. The stage is carried out in the description in the second chapter of the article. Selection of companies was made by a research team.
4. Selecting the metric data to describe the strategies of the surveyed companies in the context of the planned research goals. The adopted metric data determines the

company's stock exchange value from the listing on 1 January 2018 and 3 June 2022, allocation to the sector according to the GICS classification, allocation to the Industry Group according to the GICS classification, qualification to the group of global or local companies, qualification of the listing country, and continental qualification. Selection of companies was made by a research team.

5. Defining detailed research hypotheses. Research hypotheses were developed on the basis of preliminary research prepared by the research team. The research was based on a review of the literature, industry reports, as well as strategic documents of enterprises.
6. Preparation of an Excel spreadsheet to be filled in with data from the grey interview on the surveyed companies. The aim of the research was to fill the positions of the vision, mission, and strategy with appropriate descriptions coming only from the corporate websites of the surveyed companies. Due to the lack of consistency and problems with identifying the above three components in corporate documents, the following was adopted: analysis of information from the main page of the surveyed company, analysis of information from investor relations (tabs: strategy, basic information, annual analyses, lists of CEOs to investors, analysis of investor presentations). As the data used to describe selected content very rarely appeared under the keywords vision, mission, and strategy, it was assumed that:
    - the following keywords were used to define the vision: challenges, CEO declarations;
    - the following keywords were used alternatively to describe the mission: philosophy, values we profess;
    - the following keywords were used alternatively to define the strategy: main goals and objectives.

Table 2. List of the surveyed Energy and Utilities companies from individual stock exchange indicators in countries of the G7 Group.

	G7 Countries [1]					
	Canada	**France**	**Germany**	**Italy**	**UK**	**USA**
Companies from the Energy and Utilities sector	Brookfield Infrastructure Partners; Canadian Natural resources; Cenovus Energy; Enbridge; Imperial Oil; Suncor Energy; TC Energy;	Engie; TotalEnergies; Veolia Environmental;	E.On; RWE;	A2A; Enel; Eni; Hera; Italgas; SNAM; Tenaris SAReg; Ternarete;	BP; Shell; National Grid; SSE;	Chevron;

[1] None of the top 30 most valuable companies from the Nikkei 225 Index were classified as belonging to Energy or Utilities. Source: own study.

The obtained data came either from 2021 (mainly stock exchange reports) or from the period until 30 June 2022. The grey interview was conducted by market experts who know how to identify the company's strategy and define development directions. The minimum experience of an expert in the company's strategy analysis was four years.

7. In the expert assessment (five strategic management specialists), assigning the acquired content to the correct position in the potential pivot table due to the adopted research hypotheses. Additionally, cross-verification and calibration of experts' assessment regarding company strategies were conducted.
8. Data analysis in order to answer research hypotheses.
9. Final evaluation of the conducted study. Formulating guidelines for further research.

Based on the procedure presented above, the Authors prepared a research sample. All companies analyzed as the part of the research have met specific criteria. Of the companies listed in the seven most important stock market indexes of seven countries from the G7

Group list, 25 were selected for the study, i.e., the companies listed in the following indexes: Dow Jones Index USA (30 companies), DAX Germany Index (40 companies), FTSE Index United Kingdom (100 companies), CAC Index France (40 companies), FTSE MB Index Italy (40 companies), Nikkei Index Japan (225 companies) and S & P/TSX Composite Index Canada (250 companies). These are companies from the Energy and Utilities sector from the GICS classification.

To describe the structure of the studied group by sector, the division of economic sectors according to GICS (Global Industry Classification Standard) was used. In the study, the basis for the choices are the first two iterations of the GICS classification: eleven sectors divided into 24 Industry Groups.

From each stock exchange's index, the Authors extracted the top 30 most valuable (based on the market value as of 3 June 2022). Then, from those top 30, all companies classified as belonging to Energy Sector or Utilities sector were taken into the analysis. The following sector's definition was used, based on the Global Industry Classification Standard (GICS®):

- Energy Sector: it includes companies engaged in energy-related activities like exploration and production, storage and transportation, refining and marketing and of oil and gas and coal and consumable fuels. Moreover such sector also includes companies offering oil and gas equipment and services;
- Utilities Sector: it includes utility companies providing services such as electric, gas and water utilities. Moreover such sector also includes independent power producers, companies engaged in generation and distribution of electricity using renewable sources and also energy traders.
- [63].

Structure according to the stock exchange value of the companies quoted on 3 June 2022 is as follows (Table 3).

Table 3. Average value of a listed company in the given group of the Energy and Utilities sector.

Country	Index	Average Value of the Listed Company [$ bln]
Canada	S&P TSX	57.26
France	CAC40	68.37
Germany	DAX40	28.31
Italy	FTSE MIB	21.36
UK	FTSE100	99.58
USA	DJIA	348.95
	Grand Total	63.24

Source: own study.

In turn, Table 4 presents the average market values for individual sectors in terms of Energy and Utilities, broken down by countries selected for the analysis.

Table 4. Average values of the sector for Energy and Utilities.

Country	Index	Sector	Average Value of the Listed Company [$ bln]
Canada	S&P TSX	Energy	62.18
		Utilities	27.74
France	CAC40	Energy	152.55
		Utilities	26.28
Germany	DAX40	Utilities	28.31
Italy	FTSE MIB	Energy	33.22
		Utilities	17.40
UK	FTSE100	Utilities	37.34
		Energy	162.03
USA	DJIA	Energy	348.95

Source: own study.

The data presented in Tables 3 and 4 were used by the Authors to identify those countries that met the conditions adopted as quasi-ceteris paribus in the research procedure, i.e., economic stability and minimal state policy impact on their functioning. However, it should be remembered that this "stability of conditions" is only an assumption adopted for research, which the authors mention in the discussion of the results, with the awareness that the current energy crisis is far from balanced.

4. Research Results

The Authors of the study focused on the planning, positional, resource, innovative, and network school. They took into account their experiences and divided the schools into two leading trends, in which:

- they treat planning, positional and resource schools as classic approaches to strategy;
- they treat the innovative and network school as modern approaches to strategy.

Taking the above division into account, it can be said that 80% of the studied sample are companies with a classic approach to strategy, and 20% are companies with a modern approach to strategy (Table 5).

Table 5. Classification of approaches to the strategy.

School of Strategy	Approach to Strategy	Number of Enterprises	% of the Number of Enterprises	The Approach to the Strategy
Economy of scale (planning)	Classic approach	3	12%	Strategy defined as the implementation of financial goals, production planning, taking the appropriate market position, and managing the resources of the organization
Porter's competitive advantage (positional)		6	24%	
Building value (RBV)		11	44%	
Innovation (innovative and entrepreneurial)	Modern approach	2	8%	Strategy defined as creating value for the customer. Value defined as a product supported by additional capabilities of the product or service
Network effects within the ecosystem (network)		3	12%	

Source: Own study.

They relate to the research results and the classification. The hypotheses were verified.

When analyzing Table 6 in the context of the verification of the Hypothesis 1, it should be noted that there are no grounds to confirm it. It turns out that the dominant approach to strategy is the resource approach (44% of companies are characterized by this approach to strategy). When looking at the results from the point of view of the classic approach to strategy, as many as 80% of companies choose the classic strategy of operation in the first choice.

Table 6. Dominant approach to the companies' strategy in the first choice.

Dominant Approach to Strategy in the First Choice	Sector		Total
	Energy	Utilities	
Economy of scale (planning)		3	3
Porter's competitive advantage (positional)	6		6
Building value (RBV)	5	6	11
Innovation (innovative and entrepreneurial)		2	2
Network effects within the ecosystem (network)	1	2	3
Sum	12	13	25

Source: Own study.

The dominant approach to the strategy is the positional approach in the first choice, but the planning approach was not indicated in any case. To sum up, it is possible to confirm the correctness of Hypothesis 2 in the presented research sample. It is also worth adding that the planning approach dominates when choosing the second choice of strategy (Table 7).

Table 7. Approach to the companies' strategy in the second choice.

Dominant Approach to Strategy in the Second Choice	Sector		Total
	Energy	Utilities	
Economy of scale (planning)	5	4	9
Porter's competitive advantage (positional)	2		2
Building value (RBV)	3	3	6
Innovation (innovative and entrepreneurial)	1	5	6
Network effects within the ecosystem (network)	1	1	2
Sum	12	13	25

Source: Own study.

The dominant approach to the strategy is the resource approach in the first choice. The planning approach is indicated as another important one. To sum up, there are no grounds for stating the correctness of Hypothesis 3. Such an approach may indicate a greater awareness of having intangible resources in the enterprise, which may constitute a competitive advantage.

The aim of the Hypothesis 4 is to verify the relationship between a country's abundance of natural resources and its approach to strategy. Based on the analysis carried out in the previous part of the article, it can be presumed that in countries rich in natural resources, classic approaches (planning and positional) to strategy dominate, because companies operating in these markets focus on the exploitation of deposits to which they have easier access, which also translates into effective building of a competitive advantage.

The total natural resources rents (% of GDP) ratio reported by the World Bank [64] was used to analyze the country's abundance of energy resources. "Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents. The estimates of natural resources rents are calculated as the difference between the price of a commodity and the average cost of producing it. This is done by estimating the price of units of specific commodities and subtracting estimates of average unit costs of extraction or harvesting costs. These unit rents are then multiplied by the physical quantities countries extract or harvest to determine the rents for each commodity as a share of gross domestic product (GDP)" [65]. Thanks to this indicator, it is possible to determine the level of wealth of countries in terms of extracting natural resources, as a higher indicator means greater prosperity. The values of total natural resource rents for the studied group of countries are presented in the Table 8 below.

Table 8. Total natural resource rents (% of GDP) in 2020.

Country	Total Natural Resource Rents (% GDP)
USA	0.5
UK	0.4
France	0
Italy	0.1
Germany	0.1
Canada	2.2

Source: Own study.

The highest rate of achieved rents as % of GDP is in North America (Canada and USA), then Europe (UK, Italy and Germany, France).

In Table 9, the research group was divided according to the dominant approach to the strategy and the country of the company's seat.

Table 9. Percentages of the indicator of achieved rents (% GDP).

	Canada	France	Italy	UK	USA	Germany
Economy of scale (planning)	1 (14%)	0 (0%)	2 (25%)	0 (0%)	0 (0%)	0 (0%)
Porter's competitive advantage (positional)	2 (29%)	1 (33%)	1 (13%)	1 (25%)	1 (100%)	0 (0%)
Building value (RBV)	3 (43%)	1 (33%)	3 (38%)	3 (75%)	0 (0%)	1 (50%
Network effects within the ecosystem (network)	1 (14%)	0 (0%)	2 (25%)	0 (0%)	0 (0%)	0 (0%)
Innovation (innovative and entrepreneurial)	0 (0%)	1 (33%)	0 (0%)	0 (0%)	0 (0%)	1 (50%)
Total	7	3	8	4	1	2

Source: Own study.

In all the analyzed countries, the classic approach to strategy is dominant, respectively in Canada, Italy, UK, France, and others as it was presented in Table 10. On the other hand, to verify the hypothesis, Pearson's correlation coefficient was used between the variables: total natural resource rents (% GDP) and share of classic approaches to strategy (in natural numbers and percentage), which was presented in Table 11.

Table 10. Classic and modern approach to strategy by country—research results.

Approach to Strategy	Canada	France	Italy	UK	USA	Germany
Classic	6 (86%)	2 (67%)	6 (75%)	4 (100%)	1 (100%)	1 (50%)
Modern	1 (14%)	1 (33%)	2 (25%)	0 (0%)	0 (0%)	1 (50%)

Source: Own study.

Table 11. Share of approaches to the strategy according to the indicator of achieved rents (% GDP).

Country	Total Natural Resource Rents (% GDP)	Share of Classic Approaches to Strategy	Share of Modern Approaches to Strategy
USA	0.5	1 (100%)	0 (0%)
UK	0.4	4 (100%)	0 (0%)
France	0	2 (67%)	1 (33%)
Italy	0.1	6 (75%)	2 (25%)
Germany	0.1	1 (50%)	1 (50%)
Canada	2.2	6 (86%)	1 (14%)

Source: Own study.

Comparing the Total natural resource rents (% of GDP) index with the classification of management approaches by country of the research group, we notice a lack of correlation, which means that the country's abundance of natural resources does not affect the employed strategic management approach: correlation is <0.6, which is classified as weak. This points to the fact that countries that are more abundant in natural resources are beginning to diversify more than focusing on exploitation and to use the value generated in this sector for development in other areas. To sum up, there are no grounds to confirm the validity of Hypothesis 4.

The companies in the research group are located in developed countries, where green climate policy is of increasing importance and popularity. Political factors may force the research group to transform, which also forces the use of modern approaches to strategy. In order to adapt to the currently functioning requirements, companies use activities that fit in with network and innovative and entrepreneurial activities. Therefore, the authors decided to investigate the relationship between the share of green energy supply in the energy mix of a given country and the applied approaches to the strategy.

To verify Hypothesis 5, there was used data on the energy mix from the IEA for the studied countries. The share of renewable energy sources in the energy mix for individual

countries is presented in the table below. In this comparison, the largest amount of energy from renewable energy sources is produced by Italy, followed by Germany, Canada, UK, France, and the USA, which was presented in Table 12.

Table 12. Share of renewable energy supply by country.

Country	Share of Renewable Energy Supply
Italy	21%
Germany	18%
Canada	17%
UK	15%
France	12%
US	9%

Source: Own analysis based on IEA World Energy Outlook (https://www.iea.org/reports/world-energy-outlook-2021) accessed on 14 June 2022.

On the other hand, the share of approaches to the strategy by country in the studied sample is presented in Table 13.

Table 13. Share of approaches to the strategy by country in the studied sample.

Country	Share of Renewable Energy Supply	Share of Classic Approaches to Strategy	Share of Modern Approaches to Strategy
USA	9%	1 (100%)	0 (0%)
UK	15%	4 (100%)	0 (0%)
France	12%	2 (67%)	1 (33%)
Italy	21%	6 (75%)	2 (25%)
Germany	18%	1 (50%)	1 (50%)
Canada	17%	6 (86%)	1 (14%)

Source: Own analysis based on IEA World Energy Outlook (https://www.iea.org/reports/world-energy-outlook-2021) accessed on 14 June 2022.

When analyzing the above table, it can be noticed that the greater the production of energy from renewable sources, the more representatives there are of modern approaches to the strategy. Italy, as a leader in the production of green energy, has two (the most) companies with dominant modern approaches. It is followed by Germany, Canada, and France with over 10% share of green energy and the dominant modern approach to strategy.

Based on the above analysis, Hypothesis 5 can be confirmed, which means that a higher share of green energy in the energy mix positively stimulates companies to apply modern approaches to strategy, i.e., network and innovative-entrepreneurial approaches.

In the next step, the authors decided to examine the relationship between the use of approaches to the strategy and the value generated for shareholders. Maximizing shareholder value is at the heart of the contemporary organization and is the main goal for the management decision makers [66,67].

To verify Hypothesis 6, there was compared the market capitalization of companies on 1 January 2018 and on 3 June 2022 (five years later) in order to see the impact of approaches to the strategy [68]. The authors used total shareholders to assess the performance of the companies; the higher the returns, the better is corporate performance [69]. The values were summed up for the representatives of classic and modern approaches to strategy. The result is presented in the table below.

Table 14 shows that representatives of modern approaches to strategy generated higher returns on investment. Based on this, it can be indicated that companies applying a modern approach to strategy are more attractive to investors because they bring greater returns on investment (confirmed Hypothesis 6).

Table 14. The dynamics of an organization's market capitalization in the context of approaches to strategy.

Approach to Strategy	Market Capitalization on 1 January 2018	Market Capitalization on 3 June 2022	Dynamics
Classic	541 bln USD	666 bln USD	+23%
Modern	716 bln USD	915 bln USD	+28%

Source: own analysis based on company's financial data (companies' website).

5. Conclusions

The aim of the research was to identify the hierarchy of selected approaches to building a strategy in companies from the Energy and Utilities sector included in the seven stock market indicators of the G7 countries. In the case of the Energy and Utilities sector, the resource school dominates, which the authors qualified for the classic approach. On the other hand, in the case of the Energy sector itself, the positional approach is dominant, and in relation to Utilities, the resource approach. These two schools of strategy were also included in the classic approach to strategy. One could derive the following hierarchy for strategic approaches in Energy and Utilities sector:

1. Resource approach, where resources are at the heart of these organizations and build the value through the ability to find and exploit unique resources. Competition for access to deposits, as well as key know-how, knowledge, competencies, experience of employees in the field of deposit exploitation, as well as access to technology—these are only a few selected examples characterizing the strategies of Energy and Utilities companies in the field of resource approach.
2. Positional approach, resulting in shaping the competitive position in the sector of differentiating the Chamberlin's rent. Aggressive competition between entities in the sector, caused by, for example, the homogeneity of the product, building new barriers to entering the sector, as well as ensuring that exit from it is not simple—these are the selected tools for shaping their position by competing energy production companies.

The research conducted in this article also investigated modern approaches to the strategy (innovative-entrepreneurial and network approaches). The results showed these approaches do not play a significant role, which in the light of the verification of the sixth hypothesis is quite surprising. As the research shows, it is these approaches to the strategy that bring higher returns on investment.

The fourth hypothesis, which aimed to find a relationship between the resource in the natural raw materials of the surveyed country and the classic approach to the strategy, was rejected. Thus, the assumption that in the case of easier access to fossil fuels, organizations focus on the effective building of a competitive advantage. At the same time, the authors emphasized that the leading strategic approaches in this case would be positional and planning. Therefore, there is some doubt that has shaped into potential research questions, namely:

- Do organizations operating in countries richer in energy resources use a resource approach to strategy?
- Do organizations operating in countries richer in energy resources use an innovative and entrepreneurial approach to strategy?
- Do organizations operating in countries richer in energy resources use a network approach to strategy?
- If organizations operating in countries richer in energy resources use a mix of modern strategy approaches, what is the percentage ratio of the impact of each of them? In other words, what percentage of the organizations use rare resources to generate above-average competitive position as a result of innovative-entrepreneurial and network activity?

These questions are the focus of another scientific study in the field of exploring and explaining the hierarchy of strategic approaches in practice. The empirical exemplification

will be carried out in the optics of the results of another hypothesis, according to which modern strategies, i.e., network and innovative-entrepreneurial strategies, are characteristic of those organizations that invest in so-called green energy. In this area, the element that deserves interest is also the determination of the percentage share of individual approaches of the aforementioned strategies among renewable energy producers. This way, an attempt can be made to further prioritize approaches to building a strategy in companies from the Energy and Utilities sector, as well as to answer the question: which of the modern approaches to strategy—the innovative-entrepreneurial or network approach—is more important and more often used in the case of these organizations?

Empirical research into companies from the Energy and Utilities sector requires a clear division of research entities and conducting of empirical proceedings in at least two groups, i.e., black energy and, separately, suppliers of green energy. The research carried out in this area will allow a precise strategic hierarchy to be defined in these two homogeneous groups. The sixth hypothesis predestines the conclusion that in the modern business world, including in such a specific sector of the economy as energy, the strategies which determine and influence the development of an organization are intertwined network and innovation strategies. Therefore, an attempt can be made to develop another strategic school, at the base of which would be two, simultaneously used, tools:

- for shaping relations and influencing the environment by using network operationalization for this purpose;
- for shaping the interior of companies by focusing on innovative and entrepreneurial activities, which may take various forms;
- for combining these forms, e.g., in the form of crowdsourcing.

It is also an important utilitarian application, constituting a crucial recommendation for all organizations in the Energy and Utilities sector.

The article is an introduction to research on the hierarchy of applied strategies, in terms of classic versus modern, among organizations from the Energy and Utilities sector. It turns out that the issues related to the implementation of the research goal, which was precisely this identification of the hierarchy of selected approaches to building a strategy in companies from the Energy and Utilities sector, included in the seven stock market indexes of the G7 countries, opened the way for further utilitarian and scientific explorations (conclusions resulting from the verification of the fourth hypothesis). This means that the scientific goal has not been fully achieved, which, however, does not affect the quality of the research. On the contrary, it adds a cognitive aspect to it.

Nevertheless, in the present extent of the research goal, it should be emphasized that organizations operating in democratic, relatively stable geopolitical conditions show the use of strategic methodologies from the resource school, then positional, and only then planning. Thus, innovative-entrepreneurship and network approaches do not play a significant role. This is surprising, because those are the strategies that bring the greatest returns from the investment (research application).

What needs to be emphasized is that the G7 countries need to adapt a higher degree of innovation aimed at specializing in environmentally friendly products. According to studies carried out so far, both the optimization of administrative and management mechanisms towards the reduction of environmental degradation are recommended in G7 countries [5].

One method of improving innovation activities in the field of green energy is to use open innovation, which derives from the environment of modern organizations. Such innovations are, for example, eco-innovations, centered on an open business model as an opportunity to increase sustainability. Green solutions that respond to the global energy crisis are becoming increasingly important in the Energy and Utilities market development area [70].

In summary, the scientific and utilitarian goal was also achieved, because the acquired knowledge cognitively broadens strategic management, and its practical use may be an

important distinguishing feature of the development of an organization in the Energy and Utilities sector, which will also benefit management practitioners.

The research contribution has both academic and practical aspects. From the academic point of view, it enriches the current knowledge of strategic management in Energy and Utilities sectors. The analysis and conclusions on the dominant strategic approach allow areas of management sciences in the field of organizational theory, operations management and business models to be further developed, as the authors have identified dominant directions and focus of Energy and Utilities companies. On the other hand, it also shows that modem approaches to strategy are not well established, which is quite surprising given the fact of higher returns. Thanks this research, we discovered another area of academic study to further understand why companies are reluctant to exploit innovative-entrepreneurial and network effects in their organization, operations, and business models.

From the practical point of view, the conducted research contributes to the nature of informed decisions for key management on strategic directions. The study shows that the lack of dominance of modern approaches to strategic management gives lower returns. The study also gives information on the competitive landscape and nature of their operations where resource and positional approaches dominate. Creating value is one of the key responsibilities of a company's management. The results of the research, therefore, should be the recommendation to key decision-makers that to maximize returns they should change the focus from classical competition for access to deposits, key know-how, knowledge, competencies, experience of employees and technology, to innovative approach and network creation.

These issues are the conclusion that the research team decided to explore in a subsequent paper with the working title 'Energy Communism and its Implications for Energy Consumers in Selected Countries'. The main thesis of the study are the conclusions of this article, which oscillate around the energy suppliers' lack of attention to the green energy needs of end consumers. That is especially surprising in the context of the hypothesis being tested, according to which the end customer is able to pay more for energy from green sources. On the basis of current research, it seems that organizations are disregarding the needs of their customers when pursuing their policy and development strategy, thus introducing so-called energy communism. The Authors would like to emphasize that this thesis is currently under investigation and its accuracy cannot be ascertained today. Nevertheless, the article allowed the topic to be analyzed in more depth, giving much greater practical and academic implications.

Even though the analysis conducted as a part of the research, the results of which were described in this paper, was broad and complex, the Authors are aware of its limitations. One main area which may be taken into consideration in future research is taking into account not just the current strategy approaches adopted by companies from Energy and Utilities sectors (identified predominantly based on the companies' declarations), but also other factors, like the stock markets, oil and gas prices or changes in the financial situation of the analyzed entities over longer periods of time. Moreover, despite the fact that the scope of this research included the G7 economies, there are some differences in politics or regulatory developments not just between those countries but also between Energy and Utilities sectors as well. Those factors may have also influenced the adopted strategies. The Authors reviewed and analyzed data published by the companies on their websites (strategy, mission, vision sections), within the quarterly reports published and also the transcripts of conference calls. This, however, could be also strengthened by interviews conducted directly with directors or managers responsible for the strategy at each of those companies. Moreover, because of the nature of this research, the Authors did not take into consideration the potential impact of the energy resources situation in each country (e.g., oil and gas price fluctuations), which may also translate into share prices and, in general, market indexes. Oil prices, in particular, influence economic growth of the country, stock markets and currency levels, as was also described in other research [71–73]. Nevertheless, it should be emphasized that Energy and Utilities companies count on stability. It is

not entirely correct, therefore, to take into account only the stock exchange indexes or commodity prices. This, however, opens potential areas for future research.

Furthermore, it is worth highlighting that this article, together with the already cited publication 'Strategies of European Energy Producers: Direction of Evolution' [1], constitute a body of information that can be successfully used for further analysis and practical exploration. This article has considered the viewpoints of the different types of rent in the various schools of strategic approaches, and in the abovementioned study, the approaches to strategy themselves by organizations in the energy sector. Hence, results indicate that this type of analysis can be carried out from different points of strategic concentration, resulting in a wide range of utilitarian conclusions.

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