

An analysis of environment factors affecting the energy sector in the context of sustainable development: the multi-criteria valuation

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Abstract

The contemporary energy sector plays a pivotal role in ensuring the reliable production of safe, ecologically clean, efficient, and cost-effective energy. The development of energy companies, their increase in value, and their integration into international structures are all crucial aspects that stakeholders must base on monitoring environmental and value changes. The measures selected and applied for that purpose must consider performance, ecological integration, technological innovativeness, and ethical and socially responsible operation, underscoring the sector's vital role in sustainable development.

In the energy sector, the concept of sustainable development, which covers the aspects of economic, ecological and social evolution, is understood as an ability to reconcile economic growth from resource consumption and environmental pollution. The introduction of market principles in the energy sector should ensure efficient and sustainable use of resources. However, a market approach and an emphasis on economic interests do not provide sustainable energy sector development. The sustainable development of the energy sector becomes more significant in long-term economic growth because qualitative factors gain more weight. Activities of stakeholder groups that emphasize the importance of nature conservation, social responsibility and sustainable consumption are also practical. The future of the energy sector is a complex interplay of global politics and economic, social and environmental issues related to development, presenting a fascinating challenge for researchers and professionals.

The activities of the energy sector, or separate companies operating within it, are commonly analyzed using methods based on quantitative (primarily economic) indicators. However, to truly understand the sector's dynamics, only those measures that enable evaluation of the

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entire set of factors which affect operation in the short term and the long term can be effective. It means that the measures must combine economic indicators of the period in question with indicators that describe a sector's (company's) ability to adjust to changing business conditions, solve its social tasks, and be a responsible part of the economy. For this task, stakeholders must compile a comprehensive system of criteria, enabling evaluation of qualitative and quantitative factors, and the most appropriate methods must be suggested to implement this task, highlighting the urgency and importance of your research in developing such a method.

The article presents a model for analyzing environmental factors affecting the energy sector. It suggests a method based on multi-criteria analysis to determine the impact of environmental factors on the value.