Exploring the Strategic Transformation of Geological Exploration Enterprises based on Ecological Civilization Construction

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Abstract. The strategic transformation of geological exploration enterprises is crucial for their participation in ecological civilization construction. In the process of strategic transformation, these enterprises effectively manage resources, avoid excessive development, and achieve sustainable utilization of resources. They place high emphasis on environmental protection and governance, employing environmentally friendly technologies and monitoring measures to mitigate negative environmental impacts. By applying modern exploration techniques, they assess mineral resources to enhance the accuracy of resource reserve evaluations and provide scientific foundations for resource development. Furthermore, they prioritize innovation and application of green technologies to reduce resource consumption and environmental pollution, offering solutions for sustainable development. Through promoting resource cooperation, data sharing, technological exchange, policy coordination, experience sharing, information dissemination, and public participation, they aim to achieve collaborative development and enhance resource utilization efficiency, ecological environment protection, and resource management.

Keywords: Ecological civilization, geological exploration enterprises, strategic transformation, technological innovation

1 Introduction

The strategic transformation of geological exploration enterprises is crucial for the construction of an ecological civilization [1-8]. It primarily involves resource cooperation and sharing, data sharing and technological exchange, policy coordination and cooperation mechanisms, experience sharing and reference, and information sharing and public participation [9-15]. By enhancing cooperation and sharing among geological exploration enterprises, the coordinated development of resource management and environmental protection can be achieved, promoting the overall effectiveness of ecological civilization construction, increasing social recognition and public participation in ecological civilization construction, and gradually forming a collaborative

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force for ecological civilization construction with the participation of the entire society [16-22].

2 Resource Management and Planning

The strategic transformation of geological exploration enterprises has a wide-ranging and profound impact on the field of resource management and planning. It ensures the scientific evaluation and estimation of resources, promotes their sustainable utilization and development, and takes into account ecological environmental factors, enabling diversified resource development and facilitating resource cooperation and integration. These impacts contribute to effective resource management and optimal allocation, promoting the coordinated development of resource exploitation and environmental protection [23-29].

During the process of resource management and planning, the strategic transformation emphasizes the consideration of ecological environments by geological exploration enterprises. When determining resource development areas and plans, geological exploration enterprises comprehensively consider the vulnerability, sensitivity, and the need for biodiversity conservation of the ecological environment to minimize adverse impacts on the environment. This holistic consideration of the ecological environment helps ensure the coordinated development of resource exploitation and the environment. In the process of achieving diversified resource development, geological exploration enterprises not only consider traditional mineral resource development but also take into account other types of resources such as water resources, energy resources, and land resources to achieve their comprehensive utilization and coordinated development. This approach to diversified resource development helps optimize resource allocation and improve resource utilization efficiency. Additionally, through cooperation with governments, businesses, and social organizations, geological exploration enterprises can jointly plan and manage resource development, achieving optimized allocation of resources and shared benefits. This mode of resource cooperation and integration contributes to the synergistic effects and mutual benefits of resource development.

3 Environmental Protections and Governance

The strategic transformation of geological exploration enterprises plays a crucial role in environmental protection and governance. This is reflected in strengthening environmental monitoring and assessment, controlling pollutant emissions, assessing and preventing ecological risks, implementing ecological restoration and recovery, ensuring compliance and regulatory enforcement, as well as promoting environmental technology innovation. These roles contribute to the reduction of environmental pollution and ecological damage, facilitating the coordinated development of resource exploitation and environmental protection [29-36].

Firstly, geological exploration enterprises attach great importance to environmental monitoring and assessment. By establishing a sound environmental monitoring net-

work and employing modern monitoring techniques, geological exploration enterprises can promptly understand the impacts of resource development activities on the environment and assess the degree of environmental risks and ecological damage. Secondly, geological exploration enterprises pay increased attention to the assessment and prevention of ecological risks. Through comprehensive analysis of geological, hydrological, meteorological, and other data, geological exploration enterprises can predict and evaluate the potential impacts of development activities on the ecological environment and take corresponding protective and governance measures to reduce ecological risks and environmental damage. Thirdly, geological exploration enterprises prioritize ecological restoration and recovery. By employing ecological engineering technologies and measures, geological exploration enterprises can restore areas affected by development, restore the functionality and biodiversity of ecosystems, and thus achieve the restoration of ecological balance. Fourthly, geological exploration enterprises emphasize environmental compliance and regulatory enforcement. By establishing sound environmental management systems and regulatory mechanisms, geological exploration enterprises can strengthen compliance inspections and law enforcement supervision of resource development activities, ensuring that development practices comply with environmental regulations and standards. Fifthly, geological exploration enterprises engage in technological innovation in environmental protection and governance. By introducing and applying green and clean technologies and processes, such as energy-saving and emission reduction technologies and environmental remediation technologies, geological exploration enterprises can enhance the environmental friendliness of resource development activities, thereby promoting the development of a green economy.

4 Mineral Resource Assessment and Reserve Estimation

In the strategic transformation, geological exploration enterprises employ modern geological exploration techniques and methods for the assessment and reserve estimation of mineral resources, providing a scientifically reliable basis for resource development through accurate geological information and quantitative evaluation. Additionally, these enterprises emphasize the sustainable utilization and development of resources, ensuring long-term sustainable utilization through rational planning and comprehensive utilization. These measures contribute to the effective management and sustainable development of mineral resources.

Regarding the sustainable utilization and development of mineral resources, geological exploration enterprises establish reasonable resource development plans and management measures to avoid overexploitation and waste of resources. In the planning process, these enterprises fully consider the timing, spatial distribution, and scale of resource extraction, optimize development methods, and reduce adverse environmental impacts to ensure the long-term sustainable utilization of mineral resources. In terms of comprehensive resource utilization, geological exploration enterprises achieve efficient utilization of ore resources by studying and applying advanced min-

ing and smelting technologies, maximizing the recovery of valuable minerals, and reducing the demand for raw materials and environmental impact.

5 Green Technology Innovation and Application

The strategic transformation of geological exploration enterprises plays an important role in promoting green technology innovation and application. These roles primarily manifest in innovative technology research and development, the application of environmental protection technologies, efficient resource utilization, reduction of environmental risks, and the promotion of green economic development. These efforts contribute to the coordinated development of resource exploitation and environmental protection, aiming to achieve sustainable development goals.

The strategic transformation encourages geological exploration enterprises to actively engage in innovative research and development of green technologies. By investing in financial and human resources, these enterprises conduct research on green technologies to explore new technical approaches and solutions, addressing environmental challenges in the process of resource development. The strategic transformation drives geological exploration enterprises to apply green technologies in practical production and development processes. For example, they adopt clean energy technologies such as solar and wind energy to reduce reliance on traditional energy sources. They also utilize low-carbon technologies to minimize greenhouse gas emissions and employ environmental monitoring technologies to monitor the environmental conditions in real-time and take timely measures to protect the environment. The strategic transformation promotes efficient resource utilization through the application of green technologies. Green technologies can enhance the efficiency and effectiveness of resource development, minimizing waste and losses. For instance, by employing advanced exploration techniques and processes, the efficiency of ore mining and processing can be improved, leading to reduced resource losses. The strategic transformation encourages geological exploration enterprises to reduce environmental risks through the application of green technologies. Green technologies can mitigate pollution and environmental degradation, reducing the probability of environmental risks. For example, environmental measures and technologies are implemented to prevent the leakage and spread of pollutants, safeguarding surrounding water bodies and ecosystems. The strategic transformation stimulates the efforts of geological exploration enterprises in green technology innovation and application, contributing to the development of a green economy. The application of green technologies can create new industries and employment opportunities, promoting economic transformation and sustainable development.

6 Collaboration and Sharing

The strategic transformation of geological exploration enterprises can promote enhanced collaboration and sharing, not only achieving synergistic development in resource management and environmental protection but also driving the overall effec-

tiveness of ecological civilization construction. It also contributes to increasing social recognition and public participation in ecological civilization construction, forming a collective effort of the entire society to participate in ecological civilization construction.

The strategic transformation of geological exploration enterprises can drive resource cooperation among companies. Through deepening the sharing of resource information, exchanging technical expertise, and sharing research outcomes, geological exploration enterprises can enhance the efficiency and sustainability of resource development, reduce resource waste and redundant development, and promote the rational utilization of resources. The strategic transformation promotes data sharing and technical exchanges among geological exploration enterprises. These enterprises can share environmental monitoring data, exploration materials, and research outcomes, facilitating the circulation and sharing of information. Additionally, through technical exchanges and collaborative research and development, they can promote technological progress and innovation, elevating the level of ecological environment protection and resource management. The strategic transformation encourages synergy among the geological exploration industry, academia, and research institutions. Geological exploration enterprises can collaborate with government departments, research institutions, social organizations, etc., to jointly formulate and implement policies and measures related to ecological civilization construction, forming policy linkages and joint efforts to drive the overall effectiveness of ecological civilization construction. The strategic transformation encourages the sharing of experiences among geological exploration enterprises. These enterprises can share successful experiences in ecological civilization construction through formats such as conferences, seminars, and case studies, draw lessons from good practices in other regions or organizations, promote the exchange and mutual learning of experiences, and enhance the practical effectiveness of ecological civilization construction. The strategic transformation promotes information sharing and public participation among geological exploration enterprises. These enterprises can provide the public with relevant data on ecological environment information, resource development status, etc., increasing transparency, guiding public participation in ecological civilization construction, and forming a cooperative pattern of multi-party governance.

7 Conclusion

The strategic transformation of geological exploration enterprises has profound implications for ecological civilization construction, ensuring the sustainable utilization of resources, maintaining the stability of ecosystems, and promoting sustainable economic development. The strategic transformation emphasizes environmental protection and governance, adopting environmentally friendly technologies and strengthening monitoring measures to minimize negative environmental impacts. Mineral resource assessment and reserve estimation are important areas of concern, utilizing modern geological exploration techniques to improve the accuracy of mineral resource assessment and provide reliable foundations for resource development. By

focusing on green technology innovation and application, reducing resource consumption and environmental pollution, promoting coordinated progress between the economy and the environment, and providing sustainable solutions. Emphasizing resource cooperation and sharing, data exchange, policy coordination, experience sharing, information sharing, and public participation to promote efficient resource utilization, ecological environment protection, and coordinated development. Enhancing social recognition and public participation, and creating a favorable atmosphere for the joint construction of ecological civilization by the whole society.

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