



ADVANTAGES OF IMPLEMENTING NEW STANDARDS BASED ON ESG PRINCIPLES IN INDUSTRIAL ENTERPRISES

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Article history:	Abstract:
Received: 28 th April 2025	This paper explores the advantages of implementing new standards in industrial enterprises based on ESG (Environmental, Social and Governance) principles. Drawing on international practices, it is demonstrated that adopting ESG approaches contributes to sustainable development, ensures environmental safety, enhances social responsibility and increases investor confidence. The integration of ESG standards leads to improved production efficiency and strengthens the competitive position of industrial enterprises in the market. The study also highlights potential challenges in ESG implementation and proposes practical solutions to overcome them. In the context of the rapid development of the global economy, promoting corporate economic development while taking into account sustainable development has gradually become the focus of attention of countries around the world. The ESG performance reflects the differences in the assessment of enterprises' sustainable development potential by capital market information intermediaries. These differences affect the internal governance and external financing of enterprises, thereby influencing corporate green innovation.
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In recent years, environmental challenges, social equity and the effectiveness of corporate governance have become increasingly pressing issues on a global scale. In this context, the importance of ESG (Environmental, Social and Governance) principles is growing across various sectors and industries as a means to achieve sustainable development. For industrial enterprises in particular, integrating ESG principles into production processes not only enhances environmental and social responsibility but also ensures long-term economic benefits and competitiveness.

Today, industrial enterprises are compelled to focus not only on economic efficiency but also on factors such as environmental safety in production, working conditions for employees and transparency in corporate governance. ESG principles represent a comprehensive approach that encompasses these aspects and requires the implementation of new, modern and internationally recognized standards across all levels of industry.

The demand for social responsibility stemming from sustainable development is transforming the conventional notion of enterprise development, making the pursuit of sustainable green development an

unavoidable option for businesses in the contemporary era. However, it is difficult for enterprises to find a balance between the implementation of sustainable development strategies and economic benefits, so green technological innovation is considered by stakeholders as an important strategy to solve this problem. In order to achieve the goal of coordinated development of environment and economy, enterprises, as the micro-body of economic operation, should actively carry out green innovation and continuously reduce consumption and pollution to promote the green transformation of enterprises, so as to realize the win-win situation of economic growth and environmental protection. Green technological innovation is marked by extended cycles and substantial investment, which do not yield significant short-term benefits for enterprises. Instead, it necessitates sustained long-term investment, diminishing the enthusiasm and innovative capacity of businesses. Therefore, exploring how to incentivize enterprises to promote green technology and improve the efficiency of green innovation is valuable for realizing the synergistic high-quality development of the economy and the environment. Current research on the



determinants of enterprises' green innovation capacity predominantly emphasizes macro-level aspects such as environmental regulation and bilateral investment, while micro-level factors like environmental protection investment and digital transformation are minimally addressed. As a particularly important type of institutional innovation, sustainability evaluation plays a great role in guiding enterprises to practice

sustainability guidelines and realize green transformation to achieve high-quality development [6]. In recent years, an increasing number of investors have incorporated environmental, social responsibility, and corporate governance performance into their analyses and evaluations of enterprises, as illustrated in Figure 1.



Figure 1. ESG structure.

In today's industrial environment, success is no longer measured solely by financial performance. Increasingly, stakeholders expect companies to operate responsibly with regard to the environment, society and governance—collectively known as ESG principles. Implementing new standards based on ESG in industrial enterprises not only enhances corporate responsibility but also strengthens competitive advantage and long-term sustainability.

Implementing ESG principles helps industrial enterprises improve their public image and gain the trust of consumers, investors and communities. A 2024 global survey found that companies adhering to ESG standards are more likely to be viewed favorably by stakeholders, which can lead to greater market share and customer loyalty.

Investors are increasingly prioritizing ESG-compliant companies. According to a 2024 investor survey, 77% of institutional investors prefer companies with strong ESG performance. Additionally, such companies often secure loans on more favorable terms, as they are perceived to be lower-risk and more sustainable in the long term.

ESG implementation drives efficiency by optimizing resource use, reducing waste, and lowering energy consumption. For example, adopting energy-efficient technologies in production processes can significantly reduce operational costs over time.

Environmental and regulatory risks can severely impact industrial operations. ESG-aligned standards help companies minimize these risks by ensuring compliance with environmental laws, reducing emissions and



enhancing workplace safety. This minimizes the likelihood of penalties and improves risk management. ESG drives innovation. Companies that align with sustainability principles are more likely to develop eco-friendly products and services, opening doors to new markets. For example, producing biodegradable packaging or energy-efficient appliances can attract environmentally conscious consumers.

Today's consumers prefer brands that align with their values. A 2024 study showed that 46% of consumers are more likely to buy from companies that follow ESG principles. By addressing environmental and social concerns, businesses can win customer loyalty and expand their client base.

Companies that prioritize ESG tend to create healthier, safer and more inclusive workplaces. This improves employee morale, reduces turnover and helps attract top talent—particularly among younger generations who value purpose-driven work.

Integrating ESG-based standards in industrial enterprises is no longer optional—it's a strategic necessity. These standards not only improve a company's environmental and social performance but also boost financial resilience, innovation and stakeholder trust. Over time, ESG implementation leads to increased profitability, sustainable growth and a more robust competitive position in the market.

In the modern industrial landscape, ESG (Environmental, Social, and Governance) principles have emerged as a strategic foundation for sustainable development. "Navoiyuran" State Enterprise, Uzbekistan's leading uranium mining and processing company, presents a compelling case of how ESG standards can be successfully implemented in heavy industry. This case study explores the systematic integration of ESG-based international standards at "Navoiyuran," the outcomes achieved, and its broader implications for industrial transformation.

"Navoiyuran" is a state-owned enterprise operating in the uranium mining sector, which is considered environmentally and technically sensitive. The enterprise plays a key role in the national economy and is directly involved in strategic resource extraction and export.

In line with Presidential Decree No. PQ-319 dated July 14, 2022, the company was tasked with increasing uranium production and ensuring compliance with global ESG standards as part of a national strategy to modernize industrial enterprises and improve international competitiveness.

Between 2023 and 2025, "Navoiyuran" undertook a structured approach to implement internationally recognized ISO standards related to ESG:

2023: Initial Phase

- **ISO 9001** – Quality Management System
- **ISO 14001** – Environmental Management System
- **ISO 45001** – Occupational Health and Safety Management System

These standards formed the foundation of ESG compliance, improving internal controls, workplace safety and environmental stewardship.

2024: Digital and Energy Management

- **ISO 27001** – Information Security Management System
- **ISO 50001** – Energy Management System

The second phase focused on securing data infrastructure and increasing energy efficiency — key aspects of responsible governance and environmental impact reduction. These certifications were issued by CERT International on **May 22, 2024**.

2025: Ethical and Compliance Focus

- **ISO 37001** – Anti-Bribery Management System

• **ISO 37301** – Compliance Management System

The third phase, certified on **June 5, 2025**, strengthened the enterprise's ethical governance and legal compliance, in line with global anti-corruption and regulatory standards.

The cumulative result of these efforts includes:

- **Strengthened public and investor trust** due to international certification.
- **Enhanced environmental performance**, particularly in hazardous waste management and emission control.
- **Improved workplace safety** and employee satisfaction.
- **Increased efficiency**, particularly through reduced energy consumption and streamlined processes.
- **Improved access to international markets and capital**, as ESG-compliant companies are more attractive to global investors and partners.

The transformation of "Navoiyuran" illustrates how ESG principles can be effectively institutionalized in a post-Soviet industrial context. This serves as a model for other state-owned and private enterprises in Uzbekistan and Central Asia seeking to improve their sustainability profile and global competitiveness.

Furthermore, the company's success reinforces the role of government policy (such as PQ-319) in driving ESG adoption across strategic industries.

The experience of "Navoiyuran" State Enterprise demonstrates that ESG implementation is not merely a formal requirement but a strategic investment into long-term sustainability, operational excellence and



reputational advantage. Through a phased, standard-based approach, the enterprise has transformed from a conventional mining operation into a modern, ESG-compliant industrial leader, setting a benchmark for others to follow.

The integration of new standards based on ESG (Environmental, Social and Governance) principles in industrial enterprises represents a vital shift toward responsible, sustainable and future-proof business operations. As global attention to environmental protection, social responsibility and corporate ethics continues to rise, companies that align themselves with ESG values are not only meeting stakeholder expectations but also securing their competitive edge in the market.

In recent years, investors have increasingly focused on companies' Environmental, Social and Governance (ESG) factors. This trend is primarily driven by rising social concerns and strengthened international regulatory emphasis on sustainability. ESG criteria have become particularly important in company evaluations, especially during the pre-Initial Public Offering (IPO) stage.

In the 2020 financial year, Larry Fink, CEO of BlackRock, sent a letter to all portfolio companies declaring climate change as an investment risk. This announcement marked a new phase in the integration of ESG principles into corporate operations. Since then, a growing number of investors have adopted these principles.

The metallurgical industry faces rising global demand for steel. According to Wood Mackenzie, steel production is expected to increase by 15% from 2021 levels to reach 2.2 billion tons by 2050. The steel production process, from iron ore extraction to final product, has a high carbon footprint. Annually, the iron and steel industry emits 3.4 billion tons of carbon dioxide into the atmosphere, accounting for 7% of global greenhouse gas emissions.

Wood Mackenzie estimates that approximately \$1.4 trillion in investments will be required to decarbonize the metallurgical sector.

Each company is at a different stage on the path toward sustainable development. UzMetkombinat Joint Stock Company is pursuing enhanced sustainability to attract investor interest, secure low-interest financing, and facilitate access to the necessary funds for decarbonizing the steel industry.



The ESG strategy developed by UzMetkombinat aligns with the company's long-term sustainable development goals. These goals are ambitious and require the active participation of all stakeholders. This long-term commitment positions UzMetkombinat to become one of the world's leading sustainable steel producers. UzMetkombinat Joint Stock Company (JSC) has developed a comprehensive strategic ESG (Environmental, Social, and Governance) framework aimed at integrating sustainability principles into its long-term business strategy. This



framework reflects the company's commitment to continuous improvement in sustainability performance and aligns with global best practices.

The ESG framework is structured around three key pillars—environmental, social, and governance aspects—each treated with equal importance. The framework guides UzMetkombinat in setting and achieving ambitious long-term sustainability goals, including carbon neutrality by 2050.

To ensure progress, UzMetkombinat updates its business strategy every three years, identifying capital and operational initiatives to meet ESG objectives. The company employs measurable indicators to track performance, such as calculating greenhouse gas (GHG) emissions annually across all operational activities, including sites, mobile assets, and service divisions. This allows for precise monitoring of emission reductions relative to a baseline year (2023/24). A specific formula is used to quantify progress toward emission reduction goals:

$$F = \frac{E_R - E_C}{E_R} \text{ for } (E_R - E_C) \geq 0$$

where **F** is the percentage of progress, **ER** represents emissions in the reporting year and **EC** is emissions in the baseline year.

UzMetkombinat recognizes the importance of adapting to changing economic conditions while maintaining a steady commitment to sustainability. The company is currently conducting foundational assessments—including carbon footprint analysis, TCFD risk evaluation, and environmental audits—to establish reliable baseline data. These efforts will underpin the definition of short- and medium-term ESG targets and the implementation of concrete projects starting from 2024.

Through this strategic ESG approach, UzMetkombinat aims to become one of the world's leading sustainable steel producers, enhancing its attractiveness to investors and facilitating access to favorable financing for decarbonization initiatives.

In recent years, investors have increasingly prioritized Environmental, Social and Governance (ESG) indicators when evaluating corporate performance. ESG practices not only enhance social responsibility but also play a crucial role in ensuring business sustainability and strengthening competitiveness. Globally, the intensification of efforts to combat climate change and promote sustainable development has accelerated progress in this area.

The Joint Stock Company "Uzbek Metallurgical Plant" (Uzmetkombinat) has developed ESG frameworks that allow the enterprise to regularly analyze and manage key issues in the areas of environment, social responsibility, and governance. These frameworks aim to address three essential questions:

- What are the company's negative impacts and risks related to ESG, and how can they be mitigated?
- How can the company enhance its positive contributions in the ESG domain?
- In what ways can ESG-related issues affect the company's economic performance, both positively and negatively?

Defining the "Ideal" Sustainable Company

According to the ESG criteria defined by Delphos, an "ideal" sustainable company meets the following standards:

1. Sources all its energy from renewable sources.
2. Manages water consumption and discharge in an environmentally and socially responsible manner.
3. Produces no hazardous waste requiring landfilling or isolation.
4. Reduces emissions of harmful substances, including greenhouse gases and toxic wastewater.
5. Protects biodiversity and manages natural resources within planetary boundaries.
6. Ensures a high quality of life for its employees and surrounding communities.
7. Conducts its economic activities in a fair, ethical, and profitable way.

Uzmetkombinat views its ESG framework as a "living" document, subject to continual updates and improvements. It serves as a guide for identifying ESG-related opportunities and risks. ESG factors affect not only financial performance but also the reputation of the company.

The ESG strategic framework of Uzmetkombinat JSC supports the company's long-term sustainable development goals. Through these frameworks, the company aims to increase its environmental and social



responsibility, attract investor interest, and adapt to the demands of the global market.

This study has demonstrated that ESG-based standards provide numerous advantages, including improved operational efficiency, enhanced reputation, better access to capital, stronger risk management and increased innovation potential. These benefits are not merely theoretical—real-world cases, such as that of the “Navoiyuran” State Enterprise, show tangible outcomes like international certifications, improved compliance and greater trust from both local and international stakeholders.

Furthermore, ESG implementation promotes long-term financial resilience, employee engagement and customer loyalty, all of which are key to sustainable industrial growth. As such, adopting ESG-oriented standards is not just an ethical obligation but a strategic necessity in the modern industrial landscape.

Industrial enterprises that proactively implement ESG standards position themselves to thrive in an evolving global economy—balancing profit with responsibility and innovation with sustainability.

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