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STRATEGIC MANAGEMENT OF COMPANY SUSTAINABILITY DURING TURBULENT CONDITIONS

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ABSTRACT

Objective: The goal of this study is to identify the main challenges that a company faces when managing sustainable development factors in an unstable business environment and to propose methods and strategies for improving the management of these factors with the aim of enhancing development stability.

Methods: During the study, a case analysis of PJSC Tatneft was conducted, and methods of literature analysis and information from open sources, as well as meta-analysis, were applied.

Results: During the study, the main obstacles that the company encounters when managing sustainable development factors in an unstable business environment were identified using specific examples, and methods and ways to address them were proposed.

Conclusion: Sustainable development, as demonstrated by the research results, will help reduce energy consumption, thereby positively impacting the environmental footprint of production.

Keywords: Ecology. Sustainable development. SPP. Economic crises. Oil production.

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GERENCIAMENTO ESTRATÉGICO DA SUSTENTABILIDADE DA EMPRESA EM CONDIÇÕES TURBULENTAS

RESUMO

Objetivo: O objetivo deste estudo é identificar os principais desafios que uma empresa enfrenta ao gerenciar fatores de desenvolvimento sustentável em um ambiente de negócios instável e propor métodos e estratégias para melhorar a gestão desses fatores com o objetivo de aumentar a estabilidade do desenvolvimento.

Métodos: Durante o estudo, foi realizada uma análise do caso da PJSC Tatneft, e foram aplicados métodos de análise da literatura e informações de fontes abertas, bem como meta-análise.

Resultados: Durante o estudo, os principais obstáculos que a empresa encontra ao gerenciar os fatores de desenvolvimento sustentável em um ambiente de negócios instável foram identificados por meio de exemplos específicos, e foram propostos métodos e formas de abordá-los.

Conclusão: O desenvolvimento sustentável, conforme demonstrado pelos resultados da pesquisa, ajudará a reduzir o consumo de energia, impactando positivamente a pegada ambiental da produção.

Palavras-chave: Ecologia. Desenvolvimento sustentável. SPP. Crises econômicas. Produção de petróleo.

1 INTRODUCTION

The concept of sustainable development has become increasingly important in recent years as companies are compelled to operate not only profitably but also socially and environmentally responsibly. However, this is not an easy task, especially in today's uncertain and unpredictable business environment. To achieve sustainable development, companies must be able to manage various factors that affect their operations, even in turbulent conditions (Goryachev, 2018; Ivanova, 2023; Krylova, 2020).

The relevance of this topic is driven by several reasons. Globalization, technological innovations, and changing customer demands have created a highly dynamic and competitive market. This means that companies must be able to quickly adapt to changing circumstances and effectively manage these changes without sacrificing their core values or long-term goals (Matveev, 2019; Novikov, 2020; Smirnov, 2021; Taleb, 2022).

Consumers, investors, and other stakeholders are increasingly aware of the

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impact of business on the environment and society and demand that companies take responsibility for their actions. This requires effective management of various factors. Effective management of sustainability issues can lead to cost reduction, increased efficiency, enhanced brand reputation, and the attraction and retention of customers and employees who share similar values. This can ultimately lead to greater profitability and long-term growth.

The study of issues related to the management of sustainability factors in turbulent conditions is the focus of research by scholars such as O.S. Barysheva (2018), W. Bridges (2003), P. Senge (2018), V.P. Kozlovsky (2019), and V.N. Ivanov (2017). The scientific work of these authors has theoretical value and significance.

The aim of this work is to identify the main problems that companies face when managing sustainability factors in an unstable business environment and to propose methods and ways to enhance the effectiveness of sustainability factors management.

2 METHODS AND MATERIALS

The scholarly perspectives on sustainable development, which enabled the identification of key factors influencing it were identified during the study. To achieve this, a systematic literature review was conducted, focusing on current and seminal works in the field of sustainability.

Subsequently, guiding principles that oil companies should adhere to in order to attain sustainable development were defined. This involved a meta-synthesis of established sustainability frameworks and corporate governance standards, tailored specifically to the oil industry.

The research then narrowed its focus to examine the priority goals and measures in sustainable development as implemented by Tatneft. This was achieved by critically analyzing the initiatives and objectives outlined in Tatneft's integrated annual report for the year 2021.

Furthermore, the direct impact objectives and measures in the realm of sustainable development were scrutinized. This included evaluating the efficacy of these measures and their alignment with broader sustainability goals.

The effectiveness of Tatneft's activities within these specified objectives was analyzed using qualitative and quantitative methods. The source of data for this analysis was the integrated annual report of Public Joint Stock Company "Tatneft" for 2021 (PJSC "Tatneft". Official website, 2023b).

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For the financial and economic sustainability assessment, we calculated the financial independence and profitability ratios of Tatneft, employing data from the accounting reports of PJSC "Tatneft" for the years 2019-2022 (Audit-it.ru, 2023; PJSC "Tatneft". Official website, 2023a).

The necessary capacity values to ensure the autonomous operation of the gas station facilities were calculated. This involved the application of engineering and economic calculation methods to ascertain the requirements for self-sustaining operations.

Lastly, the study calculated the savings in funds and electricity through the implementation of solar power plants (SPP). This was achieved by using predictive analytics and cost-benefit analysis techniques to project the financial and environmental impacts of integrating SPP into Tatneft's operations.

3 RESULTS AND DISCUSSION

Sustainable development is a concept aimed at meeting the needs of modern society without having a negative impact on the environment and ensuring the equitable distribution of well-being. This concept is particularly relevant for industrial enterprises that can have a significant impact on the environment (Barysheva, 2018; Glushkova, 2020; Lenkova et al., 2019).

The conceptual foundations of sustainable development for industrial enterprises are based on the principles of sustainable development, which were first formulated in the report of the United Nations Commission on Environment and Development in 1987. These principles involve achieving a balanced development of the economy, society, and the environment (Andreev & Karachevtseva, 2019; Burak & Mikheeva, 2018; Kolesnikov, 2021).

In 1992, at the United Nations Conference on Environment and Development held in Rio de Janeiro, the Rio Declaration on Environment and Development was adopted. It recognized that sustainable development is an integral part of the process of improving the quality of life on the planet. In the subsequent years, numerous scientific studies explored the issue of sustainable development, and new concepts and methodologies for assessing and managing sustainable development were developed. Currently, scientific perspectives on sustainable development continue to evolve, and new concepts and approaches to its assessment and management are emerging (Lagutina & Gracheva, 2017).

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One of the most relevant concepts currently emerging is the concept of green growth. This concept is based on creating an economic system that ensures the efficient use of resources without harming the environment.

Key factors influencing sustainable development in this phase include efficient resource utilization, increased productivity and efficiency, risk management, participation in the international community, and others.

Overall, the goals of sustainable development for industrial enterprises are focused on creating economically, socially, and environmentally sustainable systems that contribute to improving the quality of life for people and preserving natural resources.

According to the rating agency "AK&M," only 64 out of the 300 largest revenue-generating Russian companies publish sustainability reports on their resources. As of 2021, information disclosed by 31 out of these 64 companies is rated as sufficient, acceptable, or high quality (AK&M Information Agency, 2020).

In general, when comparing trends in GRI reporting worldwide and in Russia, the number of companies focusing on sustainable development is roughly comparable. In the world, 84% of the top 250 companies, or about 70 companies, pay attention to sustainable development (AK&M Rating Agency, 2021, 2023; INFAGREEN, 2021; Lebedev, 2018; Nikiforova & Timerbaeva, 2023).

For oil companies, key factors that need to be included in their reporting typically revolve around water use and consumption, greenhouse gas emissions, waste management, and environmental responsibility. Oil companies should also consider safety risks in the workplace, as processes related to oil extraction and processing can pose risks to the health and safety of workers (Belousov, 2022; Lenkova & Deberdieva, 2019; Mikhailov, 2023; Ruzleva, 2022).

Traditionally, oil companies have been associated with environmental degradation and social upheaval. However, in recent years, there has been a growing recognition of the need for sustainable development, with two key aspects being the factors and principles guiding it. In this context, it is appropriate to examine the principles and factors of sustainable development and their distinctive features.

The principles of sustainable development for oil companies are fundamental guiding principles that they should adhere to in their practices to achieve sustainable development.

These principles encompass the following:

- Compliance with legislation and other obligations.

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- Maintaining a balance of interests among all stakeholders and building relationships with stakeholders based on mutual interest, fairness, ethics, and transparency.

- Information transparency, involving the provision of accurate and complete information with equal accessibility to stakeholders for decision-making.

- Development of an integrated risk management and internal control system, including factors of sustainable development and climate risks.

- Improvement of planning, monitoring, and reporting mechanisms.

- Prudent adaptation of sustainable development activities considering the specificities of the regions in which the company operates.

- Competence, awareness, and information exchange (Sokolova, 2022).

Based on the principles listed above, it can be concluded that the principles of sustainable development for oil companies are universal and applicable to various industrial sectors. While the challenges faced by each industry may differ, these fundamental principles should be a priority for achieving sustainable development.

In recent times, more and more companies are recognizing the importance of sustainable development and are beginning to implement corresponding measures. One such company is PJSC Tatneft.

PJSC Tatneft is one of the largest oil and gas companies in Russia, engaged in the exploration, production, processing, and sale of oil and gas. The company considers fundamental ethical principles, human rights, environmental preservation, carbon footprint reduction, improvement of social infrastructure, economic growth, and enhancing the quality of life in the regions where the Tatneft Group operates when making business decisions. A significant reference for the company is the United Nations' program "Transforming Our World: The 2030 Agenda for Sustainable Development" (United Nations General Assembly, 2015).

PJSC Tatneft integrates 10 principles and 17 Sustainable Development Goals (SDGs) into its business model as a participant in the United Nations Global Compact (Global Compact Network Russia, n.d.). Based on this, the company categorizes these goals into priority, direct impact, and indirect impact categories (Figure 1).

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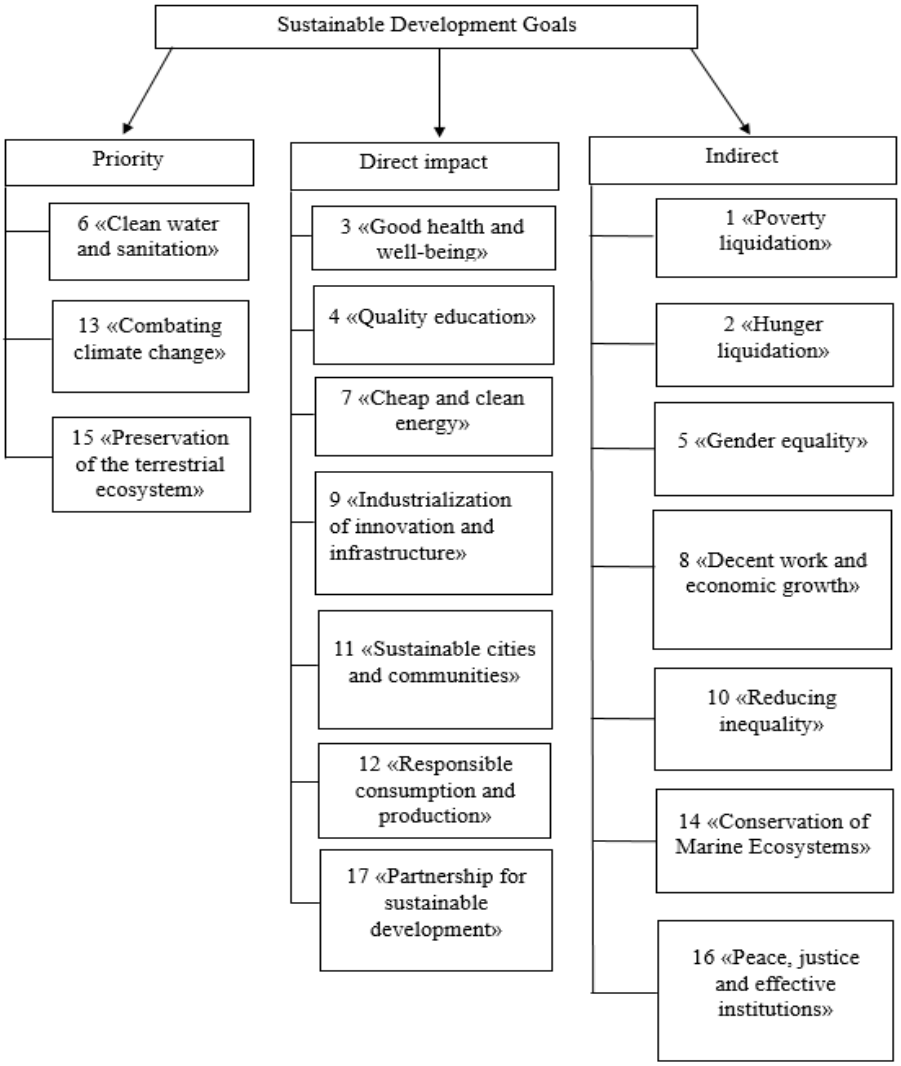

Figure 1. Sustainable Development Goals of PJSC Tatneft

In recent years, PJSC Tatneft has taken significant steps to align its business objectives with the global Sustainable Development Goals. To achieve this alignment, the company has implemented various measures aimed at reducing its environmental impact, increasing social responsibility, and ensuring economic prosperity (Renkova, 2022). This approach has allowed PJSC Tatneft to balance its business interests with the needs of society and the planet. In this context, Table 1 outlines the priority goals and sustainable development measures being implemented by the company.

Table 1. Areas of activity of PJSC Tatneft within the priority goals of UN sustainable development

Sustainable Development Goals	Areas of activity of PJSC TATNEFT
6.1, 6.3, 6.4, 6.5, 6.6 -reducing the volume of wastewater discharges by 20% by 2025, increasing the ratio of treated and untreated wastewater (by suspended solids) by 5 times -increase in the volume of recycled, reusable and reusable water by 9% by 2025	-Tatneft Group enterprises are implementing measures aimed at increasing the share of recycled water used for production needs through timely repairs of water supply networks and recycling water supply units, which made it possible to reduce intake from surface sources by 5% or by 3.8 million m3 by compared to last year;

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-reducing fresh water losses during its preparation and transportation -implementation of water desalination technologies, preparation of waste and recycled water, processing of sludge	- to preserve ecosystems with clean water, the TATNEFT Group is implementing a project to improve the health of the Stepnoy Zay River, a tributary of the Kama River; - in order to prevent contamination of surface and groundwater in the course of its activities, the TATNEFT Group implements measures to protect the internal surfaces of oilfield equipment by using anti-corrosion coating methods and electrochemical corrosion protection.
13.1, 13.2, 13.3, 13.a, 13.b - achieving carbon neutrality in 2050; -reducing the intensity of greenhouse gas emissions; -capture, use and disposal of carbon dioxide emissions: 7.2 million tons of CO2-eq.	-quarterly monitoring of greenhouse gas emissions across the TATNEFT Group (regulated by the internal standard “Greenhouse Gas Emission Management”); -development of climate strategy; - the Company’s climate projects are included in the “Combating Climate Change” Program. The program contains projects to improve the greenhouse gas emissions accounting system, reduce direct and indirect greenhouse gas emissions of the TATNEFT Group, projects for the capture, use and disposal of carbon dioxide, biological sequestration of carbon dioxide; -implementation of the reforestation program; - formation of an ecological worldview among the local population and personnel.
15.1, 15.2, 15,3, 15.4, 15.5, 15.8, 15.a, 15.b -reduction of occupied space by 16.1% by 2025; - combating desertification, restoring degraded lands and soils; - restoration of aquatic biological resources; - ensuring the conservation of terrestrial and inland freshwater ecosystems; -reduction of deforestation areas.	- the company is implementing a program for the conservation of biological diversity, developed taking into account legislative and other applicable requirements on the conservation of biodiversity and aimed at preserving rare species of animals by supporting existing specially protected natural areas (SPNA) and sparing (rational) environmental management in the habitats of rare species .

Table 2 discusses the direct impact goals and sustainability measures implemented by the company.

Table 2. Areas of activity of PJSC TATNEFT within the framework of the UN sustainable development goals of direct impact

Sustainable Development Goals	Areas of activity of PJSC TATNEFT
3.8, 3.c -reducing the number of days of temporary disability by 25% by 2025 and by 50% by 2050; -reducing the frequency and severity of industrial injuries	-creation of a Center for Restorative Medicine in the Company’s medical unit; - formation of staff motivation for a healthy lifestyle; -implementation of a program aimed at preserving life and health, as well as improving working conditions for workers, reducing accident rates, significant production risks, increasing the safety of equipment, improving the fire safety condition of facilities; -implementation of a program for the prevention of occupational diseases; -from the first days of the COVID-19 pandemic, the TATNEFT Group introduced special measures to counteract coronavirus infection. The Company has created an automated

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	platform for monitoring and analyzing the health status of personnel and providing them with personal protective equipment CVirus-Control, which makes it possible to control the risks associated with the spread of coronavirus infection and ensure continuous safe production.
4.1, 4.2, 4.4, 4a -creation of an effective, end-to-end (continuous) education system from preschool to vocational, providing multi-level training for the oil industry; -formation of worldview and involvement in achieving sustainable development goals.	-creation of a training center for vocational education; -implementation of an educational project in all regions of the Republic of Tatarstan; -development of educational school and career guidance projects
7.1, 7.2, 7.3, 7a, 7b -increasing energy efficiency and energy saving to a level of at least 2.2% of fuel and energy resources; -energy generation (increasing share) using renewable energy sources to 426 MW by 2030 and 900 MW by 2050.	- the company is implementing a targeted Program for increasing energy efficiency and energy saving for 2021-2024. The goal of the program is to curb the growth of costs for fuel and energy resources through their rational use and increasing the energy efficiency of production. The most effective areas of savings are: preparation, oil and gas processing, transport, oil and gas production technology, maintaining reservoir pressure; At generation facilities, work is underway to improve energy saving efficiency, technical re-equipment and modernization of existing capacities. The most significant and effective technologies and solutions used in 2021 and implemented in 2022: • X-Plate technology is aimed at increasing the energy efficiency and technical and economic indicators of the TGME-464 boiler plant, by reducing the cost of fuel and energy resources to produce thermal/electric energy at CHP plants • Project “Implementation of a unified automated dispatch control system”, which makes it possible to control the functions of reliable and economical supply of electrical and thermal energy of the required quality to all its consumers, taking into account the possibility of load growth and compliance with regulatory requirements for the quality of electricity under a normal network diagram and during repair schemes • “Smart Grid” technology is the organization of an intelligent network that combines management, control and monitoring tools, information technologies and communication tools that simultaneously ensure the flow of electricity and information from the power supply source to the consumer; • Patent “Creation of mathematical models (equivalent circuits) supplying and distribution electrical networks of the power supply system of PJSC TATNEFT with software development" for the use of new technologies and equipment that allow simulating planned and emergency situations in a mathematical model of the power supply system The company takes into account the role of renewable energy sources and their importance for a cleaner, low-carbon energy future and is implementing projects for the construction of

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	wind power plants and the development of downhole energy generation. To conduct research to assess the wind-solar energy potential of the territory where the Company operates, investments in the amount of RUB 11.8 million were allocated. The introduction of pellet heating equipment and solar power plants at the Company's gas stations continues; - formation of an energy efficient worldview and responsible consumption among staff.
9.1, 9.2, 9.3, 9.4 -increasing the return on investment in innovation by 15% by 2025; -increasing the attraction of government support for projects by 2 times by 2025; -increase in innovative projects to achieve the strategic goal of reducing the carbon footprint by 20%.	-application of innovative solutions and environmentally friendly technologies – 2917 active patents; - volume of R&D per 1 research worker – 0.9 million rubles; - the share of protected intellectual property objects used was 44.9%; - 100% of new projects underwent internal examination for the possibility of attracting government co-financing.
11.1, 11.2, 11.3,11.4, 11.5, 11.6, 11.7, 11.a -increasing the well-being of the standard of living of employees and the population; -development of comprehensive plans for the development of territories together with society, regional and municipal authorities; -reducing the negative impact on the environment by modernizing production and using the best available technologies.	-implementation of a program for the development of apartment buildings into the residential architecture of the city; -implementation of environmental and educational projects; -development and construction of social infrastructure facilities.
12.2, 12.4, 12.5, 12.6, 12.8 -increasing the share of recycled and reused waste to 50% by 2025, to 70% by 2030; -reduction of technological losses by 14.2% by 2025, by 20% by 2030.	-implementation of measures to ensure the transition to rational models of consumption and production.
17.17 -formation of effective partnerships with government organizations and civil society organizations	-implementation of agreements on development projects in the form of specific investment projects based on public-private partnerships and mutual integration of resources.

The activities of PJSC Tatneft within the framework of Goal 3 of direct impact have led to the following results:

A data management system for cases of temporary disability has been established.

The implementation of a standard for providing accessible quality medical services.

The accident frequency rate coefficient is 0.32, which is a decrease of 11% compared to 2020.

LTIFR (Lost Time Injury Frequency Rate, the number of cases of lost working time relative to the total working time in the organization) remains at 0.2, unchanged from 2020.

Despite the reduction in the accident frequency rate coefficient at PJSC Tatneft,

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there is a negative trend in the number of days of temporary disability due to accidents in the workplace, as indicated by the data presented in Table 3.

Table 3. Dynamics of the number of days of temporary disability as a result of industrial accidents

Year	Total	Of these, men (on average per victim)	Of these, women (on average per victim)
2019	431	321 (17,8)	110 (27,5)
2020	1765	1583 (131,1)	182 (60,7)
2021	2106	1741 (116,1)	365 (52,2)

Source: integrated annual report of PJSC TATNEFT for 2021

The analysis of the data provided in the integrated report of PJSC Tatneft allowed us to conclude that this negative trend is associated with cases of severe injuries requiring longer rehabilitation. The injuries, in turn, occurred due to employees not complying with labor discipline requirements, safety requirements during work, and a decrease in control over the organization of workplaces. This non-compliance led to an increase in the number of casualties in accidents (including fatalities), as can be seen from Table 4.

Table 4. Number of victims in accidents (fatal)

Year	Total	Of these, men	Of these, women
2019	22 (3)	18 (3)	4 (0)
2020	17 (0)	14 (0)	3 (0)
2021	22 (2)	15 (1)	7 (1)

Source: integrated annual report of PJSC TATNEFT for 2021

Thus, these results indicate the unattainability of the set goals and the ineffectiveness of the activities of PJSC TATNEFT.

For PJSC TATNEFT, an important area of personnel management policy is work with youth. The main strategic goal for the company is to create opportunities for young people in various fields of activity. Table 5 presents data on the objects and activities of the youth policy of PJSC TATNEFT.

Table 5. Objects and directions of youth policy of PJSC TATNEFT

Object of youth policy	Directions for implementing youth policy	Coverage (persons)
Young workers	-Adaptation and mentoring; -Transmission of corporate culture; -Development of professional competencies; -Development of general corporate and management competencies; -Identification and support of high-potential employees; -Organization of quality leisure time; -Development of opportunities and involvement in a healthy lifestyle and sports;	18.000

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	-Social support (life and work for pleasure); -Corporate volunteer movement.	
Students	-Targeted training in the interests of the Company, including search and identification, support of talented students; -Organization and support of student practices; -Program “Vproject”; - Popularization of the TATNEFT Group; -Education in the field of sustainable development goals; -Volunteer programs.	3.000
Pupils	-Career guidance “The world of blue-collar professions and engineering specialties”; - Popularization of the TATNEFT Group; -Education on sustainable development goals.	20.000

Source: integrated annual report of PJSC TATNEFT for 2021

Thus, the results obtained from the activities of the company in the direction of Goal 4 of sustainable development indicate the effectiveness of the measures implemented by PJSC Tatneft and the achievability of the set goals.

Within the framework of Goal 7, the company is implementing a targeted Program for increasing energy efficiency and energy conservation for 2021-2024. The main objective of this program is to restrain the growth of expenses for fuel and energy resources by rational use and improving the energy efficiency of production. It is currently challenging to draw conclusions about the attainability and results of this program as PJSC Tatneft has not provided up-to-date information.

Regarding Goal 9 of sustainable development for PJSC Tatneft, the company's innovation development strategy reflects tasks related to the implementation of an innovation management model, the formation of a target order for innovations, as well as the realization of growth potential points and the prevention of threats in the long-term perspective. The strategy ensures the filling of the technology portfolio with the best possible solutions in accordance with business needs, as well as the creation of a closed production cycle to reduce the negative impact on the environment and minimize the carbon footprint.

To assess a company's level of sustainability, it is important to consider the financial and economic aspects. PJSC Tatneft, as one of the largest oil and gas companies in Russia, plays a significant role in the country's economy and is responsible for ensuring its financial and economic sustainability. In the context of financial and economic sustainability, the following financial indicators for PJSC Tatneft will be discussed: revenue, profit, profitability, financial stability ratio, and financial independence ratio.

Table 6 presents the results of PJSC Tatneft's key financial indicators for the years 2019-2022.

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Table 6. Results of PJSC TATNEFT's implementation of key financial indicators for 2019-2022

Index	2019	2020	2021	2022
Revenue (RUB)	810 320 806	633 330 666	1 069 309 679	1 279 855 949
Profit (RUB)	156 473 774	81 665 115	142 659 528	241 863 402
Return on sales, %	19,3	12,9	13.3	18,9
Financial stability ratio	0,78	0,84	0,77	0,81
Financial Independence Ratio	0,7	0,75	0,71	0,74

Source: integrated annual report of PJSC TATNEFT for 2021

Based on the data in the table, a significant decrease in revenue was observed in 2020 compared to the previous year, with a decrease of 21.8%. In turn, profit decreased by 47.8%. One of the main reasons for the decline in revenue and profit for PJSC Tatneft in 2020 was the drop in oil prices. The COVID-19 pandemic led to a significant reduction in oil demand, resulting in a sharp decline in prices. This decrease in demand was associated with a global economic downturn caused by the pandemic, as well as travel restrictions and lockdowns that significantly reduced transportation and industrial activity.

Additionally, the company also faced a reduction in production due to the OPEC+ agreement. This agreement between the Organization of the Petroleum Exporting Countries (OPEC) and its allies, including Russia, aimed to reduce oil production to stabilize oil prices. The production cuts affected Tatneft's ability to extract and sell oil at pre-pandemic levels, further reducing revenue and profit.

Another factor contributing to the decline in revenue and profit for PJSC Tatneft was the weakening of the Russian ruble. The devaluation of the ruble led to increased production costs, as many of Tatneft's expenses are denominated in foreign currency. This further undermined the company's profitability, reducing its ability to invest in new projects and expand its operations.

In addition to these external factors, the company also faced challenges related to its internal operations. The COVID-19 pandemic disrupted supply chains and logistics, making it difficult for the company to transport oil and other products to its customers.

Despite the turbulent situation faced by PJSC Tatneft, there has been a positive trend in revenue and profit in 2021. Profit reached 142,659,528 million rubles, which is 74.7% higher than the previous year, and revenue in 2021 amounted to 1.069 trillion rubles. The key factor in achieving these results is the global increase in oil prices in 2021, which is, in turn, associated with increased demand for oil and gas products.

Important financial stability indicator, profitability of sales, was calculated for PJSC Tatneft using the company's revenue and profit data for the years 2019-2022.

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The obtained data allows us to conclude that in 2019, PJSC Tatneft was a highly profitable company. In 2020-2021, this indicator decreased, but the company did not lose its stability and did not transition into the low-profitability category. In 2022, there is a noticeable increase in this indicator by 5.6% compared to 2021, and PJSC Tatneft once again becomes a highly profitable company.

To determine the stability of PJSC Tatneft, the financial stability ratio of the company was calculated using data from the balance sheet. An acceptable value for the stability ratio for stable business operations of an enterprise is between 0.8 and 0.9. A value exceeding 0.9 indicates the financial independence of the enterprise and suggests that the company will remain solvent in the long term. Based on the results obtained, it can be concluded that PJSC Tatneft is a sufficiently stable and financially independent company.

Furthermore, as part of the research on the stability of PJSC Tatneft, the financial independence ratio was calculated, which represents the ratio of equity to the company's assets. The calculation was based on the data from PJSC Tatneft's balance sheet.

After analyzing various sources, the average normative limit for the financial independence ratio ($K_{fH} > 0.5$) was determined. Thus, the financial condition of PJSC Tatneft is considered sufficiently independent and stable.

Let's first examine the effectiveness of recommendations for transitioning to a low-carbon economy. In the context of this task, it was proposed to implement renewable energy sources, specifically the installation of solar panels on the canopies and roofs of operator buildings to reduce electricity consumption.

The average area of the canopy roofs and operator building roofs at gas stations in total is 350 square meters. Table 7 presents the values of the required power to ensure the autonomous operation of gas station facilities.

Table 7. Values of required power to ensure autonomous operation of gas station facilities

Gas station	Required power per month	Required power per day
Average gas station	8-10 thousand kW	322 kW
Flagship gas station	20-23 thousand kW	742 kW

Source: compiled by the author

Based on the data in the table, the required power for the autonomous operation of an average gas station is approximately 8-10 thousand kWh per month (322 kWh per day). For flagship gas stations, which include the latest technology equipment, the required power is around 20-23 thousand kWh per month (742 kWh per day). This

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includes the power needs for fuel dispensers, lighting, heating, ventilation and air conditioning systems, computer and communication systems, and other equipment.

There are various solar modules available with different power ratings. As an example, let's consider the installation of high-efficiency monocrystalline solar modules TOPRAY TPSM6U (72DH)-400W (5BB), which have one of the highest efficiencies. The choice of these modules is based on market analysis of solar power systems and recommendations from competent individuals in the field. Therefore, these solar modules offer the following advantages: reasonable price, power capacity that meets the electricity demand, turnkey installation services provided by the supplier, and technical maintenance throughout the operational period. Table 8 presents the specifications of the TOPRAY TPSM6U (72DH)-400W (5BB) solar modules.

Table 8. Solar modules characteristics TOPRAY TPSM6U (72DH)-400W (5BB)

Solar module power	50 000 W
Daily electricity production	300 kW
Monthly electricity output	9 000 kW
Number of modules	175 items
Price	3 195 000 rub.
Installation cost	479 250 rub.
Cost of equipment including installation	3 674 250 rub.

Source: compiled by the author

Next, we calculate the savings using the electricity tariff rate. The electricity tariff is 6.9 rubles/kW, including VAT; taking into account the monthly electricity generation (9,000 kW) of the solar power plant of the above model, the savings will be 62,100 rubles per month. The payback period for this solar power plant model will be 4.9 years. As can be seen from the calculations, the installation of solar power plants demonstrates significant savings, which can significantly reduce energy costs.

4 CONCLUSION

Sustainable development is a crucial aspect of business operations aimed at meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.

The research into the factors of sustainable development of PJSC Tatneft has shown that the company has made significant progress in implementing sustainable practices into its operations. The company has introduced various policies and initiatives aimed at reducing its impact on the environment, promoting social responsibility, and ensuring economic growth. PJSC Tatneft's commitment to the trend

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of sustainable development is evident in its investments in renewable energy sources, efforts to reduce greenhouse gas emissions, and engagement with local communities. However, there are still opportunities for improvement in areas such as waste management, greenhouse gas emissions reduction, and employee safety. Overall, PJSC Tatneft's sustainable development strategy is a step in the right direction and serves as an example for other companies striving for sustainability.

Therefore, all the recommended actions directly contribute to effective management of sustainable development factors. These recommendations will not only help the company align with the existing sustainable development factors but also expand the impact on these factors to ensure more sustainable business operations.

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