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DEVELOPMENT OF THE GREEN POLICY STRATEGIES OF ENTERPRISES: A DECENT WORK

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ABSTRACT: This research examines the symbiotic relationship between the creation of green jobs within enterprises, economic growth, and the consequential reduction in CO_2 emissions. It delves into the multifaceted advantages derived from integrating sustainable employment practices within businesses, emphasising their substantial contribution to fostering economic prosperity while concurrently mitigating adverse CO_2 emissions. The main goals of this article are as follows: to study the experience of developed countries regarding the costs of their sustainable development strategies and the effects that have been achieved; generalise the main tools for ensuring decent work on the example of large companies, evaluate the relationship between reducing nitrogen dioxide emissions and providing green jobs. A comparison of financial instruments for maintaining green workplaces at enterprises in developed countries (USA, Norway, China, Germany, Sweden, and Poland) has been made. CO_2 emissions reduction strategies, expenditure, funding, financing, and green jobs by countries have been analyzed. By investing in green initiatives and restructuring operational frameworks to prioritise sustainability, enterprises actively mitigate their carbon footprint, ultimately contributing to a greener and more environmentally conscious business landscape. This comprehensive study explores recent advancements in green job creation and renewable energy development in different countries of the world. The strategies of reducing CO_2 emissions by such companies as IKEA, Google, Unilever, and Tesla show not only positively impact the environment but can also be profitable for their businesses and guarantee decent work for their employees.

KEYWORDS: carbon dioxide emissions, green workplaces, enterprise, green economy

Introduction

The main document outlining the Sustainable Development Goals for 2030 is the "Agenda 2030 for Sustainable Development", adopted by the United Nations in September 2015. This document serves as a key strategic framework for cooperation among nations towards sustainable development, sets global priorities for 2030, and encompasses 17 Sustainable Development Goals, addressing a broad spectrum of social, economic, and environmental aspects of sustainable development. Some of the primary objectives include fostering positive changes in economic growth, combating poverty and hunger, ensuring access to quality education and healthcare, reducing inequality, promoting gender equality, conserving ecosystems and biodiversity, and tackling climate change. These goals are universal and apply to all countries, regardless of their level of development. Agenda 2030 delineates instruments for achieving these objectives, including partnerships between countries, local governments, civil society, and the private sector. This document outlines the global context and overarching strategies for addressing humanity's most pressing issues, establishing guiding principles for a fair, sustainable, and prosperous future for all nations and people.

The development of green policies by enterprises aimed at ensuring decent work and economic growth is an important topic in the modern business environment. These policies combine environmental, social, and economic aspects aimed at promoting sustainable development. Green policy in enterprises is defined as a set of strategies and practices aimed at minimising negative environmental impact, enhancing resource efficiency, and ensuring sustainable development. Some researchers, such as Porter and Kramer (2006), emphasise that integrating environmental aspects into business models can create competitive advantages and drive long-term economic growth.

The concept of decent work, as proposed by the International Labour Organization (ILO), includes ensuring workplace safety, fair wages, social protection, and respect for workers' rights. In the context of green policy, decent work becomes a central element as enterprises strive to ensure not only economic but also social responsibility. As noted in the study by Bernow et al. (2001), the implementation of green strategies in enterprises can improve working conditions, reduce health risks for workers, and contribute to the creation of new jobs in green sectors of the economy (Bernow et al., 2001). Economic growth, in turn, is an integral part of green policy in enterprises. Research indicates that the implementation of environmentally responsible strategies can stimulate innovation and improve resource efficiency. For example, a study by Hart (1995) showed that companies actively investing in clean technologies and energy efficiency have higher productivity and sustainability indicators in the long term.

Despite numerous advantages, the development and implementation of green policy face certain challenges. One such challenge is the need for significant investments in new technologies and the adaptation of production processes. Additionally, insufficient awareness and support from enterprise management can slow down green transformation processes. A study led by Schaltegger and Wagner (2011) indicates that overcoming these obstacles requires systemic changes in management approaches, including the development of clear policies and incentives at the state level.

In the wake of escalating environmental concerns and the imperative for sustainable development, enterprises worldwide are redefining their strategies to integrate green policies. This shift towards sustainability not only addresses ecological challenges but also significantly impacts the social and economic dimensions of businesses. A key focal point within this paradigm is the synergy between fostering decent work and propelling economic growth while embracing environmentally conscious practices.

The creation of green jobs within enterprises has emerged as a pivotal driver of economic growth, concurrently aligning with global sustainability objectives by curbing CO_2 emissions. This research elucidates the intertwined benefits of fostering environmentally conscious work opportunities in enhancing economic development and reducing the carbon footprint of enterprises. Green job creation inherently stimulates economic growth by spurring innovation, fostering new industries, and catalysing investments. The development of renewable energy sources, energy-efficient technologies, and sustainable practices within enterprises not only generates employment opportunities but also stimulates economic activity. Studies consistently showcase a direct correlation between the expansion of green sectors and heightened economic output, revealing that for every job created in

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renewable energy sectors, additional employment opportunities are catalysed in related industries, augmenting overall economic growth.

The integration of sustainable practices within enterprises inherently leads to a substantial reduction in CO_2 emissions. Green job creation contributes significantly to this reduction by promoting renewable energy adoption, implementing energy-efficient technologies, and embracing eco-friendly practices in production processes. By investing in these green initiatives and restructuring operational frameworks to prioritise sustainability, enterprises actively mitigate their carbon footprint, ultimately contributing to a greener and more environmentally conscious business landscape.

Central to sustainable enterprise development is the concept of decent work – a cornerstone advocated by the International Labour Organization (ILO). Decent work encapsulates fair wages, safe working conditions, gender equality, and social protection. Enterprises committed to sustainable practices understand that promoting decent work is not only an ethical responsibility but also a catalyst for enhanced productivity, employee satisfaction, and societal well-being. Contrary to conventional beliefs, sustainability and economic growth are not mutually exclusive. In fact, integrating green policies often stimulates innovation, opens new markets, and fosters competitiveness, thereby driving economic growth. Investments in renewable energy, efficient technologies, and sustainable supply chains not only reduce operational costs but also create new economic opportunities and job markets.

The convergence of green policies, decent work, and economic growth forms a symbiotic relationship. Enterprises leveraging sustainable practices tend to attract a skilled workforce, enhance employee retention, and fortify their brand reputation. By prioritising decent work conditions, businesses cultivate a motivated workforce, leading to increased productivity and innovation, thereby driving economic growth. While the pursuit of sustainable enterprises presents numerous benefits, challenges persist. Balancing short-term financial pressures with long-term sustainability goals, securing investments for green initiatives, and navigating regulatory frameworks are among the hurdles. However, these challenges also offer opportunities for innovation, collaboration, and the development of new business models aligned with sustainable practices.

The main *goals* of this article are as follows: to study the experience of developed countries regarding the costs of their sustainable development strategies and the effects that have been achieved; generalise the main tools for ensuring decent work on the example of large companies, evaluate the relationship between reducing nitrogen dioxide emissions and providing green jobs.

Particular attention should be paid to the connection between corporate green policy and the achievement of the UN Sustainable Development Goals (SDGs), specifically Goal 8 – «Decent Work and Economic Growth». The implementation of green policies can significantly contribute to achieving this goal by creating new jobs in the green economy sectors, improving working conditions, and ensuring sustainable economic growth. The process of business transition to a model of sustainable development is now a key characteristic of many economies. At the same time, the scientist's Schaper (2001) views indicate that it is a mistake to focus attention only on the activities of large firms and transnational corporations. The scientist believes that the role of small and medium-sized enterprises is often overlooked, although they are an important part of the process of implementing the concept of sustainable development. SMEs can account for up to 70% of global pollution. It examined a number of personal (predictor) variables identified in the literature (age, gender, and education level) to identify small business owners/managers with high levels of environmental attitudes and performance. The results of his research showed a high level of "green" attitudes among owners but no statistically significant relationship between owner attitudes and the actual performance of their firm. Only one demographic (predictor) factor, age, appears to be significantly associated with environmental attitudes. Three external factors were found to be significantly related to the level of environmental performance of a small firm: the amount of time available to owners for discretionary business activities, the number of owners working in the business, the level of environmental information available to business owners (Schaper, 2001).

The scientists T. Hansen, L. Winther (2011) investigated the relationship between green innovation and the performance of small and medium-sized enterprises in Nordic countries. They made the conclusion that adopting green practices impacts business performance. Wagner (2008) evaluates the relationship between adopting environmentally friendly practices and firm performance. The author examines the influence of environmental management practices on the performance of SMEs.

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Adenso-Diaz and oth. (2017) made a comparative analysis that explores the adoption of corporate social responsibility and green practices in SMEs in developed and developing countries. They examined the drivers and barriers to implementing sustainable practices in different economic contexts.

Thus, the development of green policies in enterprises is a key element in ensuring sustainable development, decent work, and economic growth. The integration of environmental, social, and economic aspects into business practices not only enhances the competitiveness of enterprises but also contributes to the achievement of global sustainable development goals. However, successful implementation of green policy requires significant investment, support from management and the state, as well as a systematic approach to change management.

Materials and methods

The research is conducted on the basis of systematic, dialectical and statistical methods on the real data of CO_2 emissions of the Statistics Portal for Market Data (Statista, 2024a, 2024b).

This section outlines the approach taken to collect, analyse, and assess data pertinent to the Sustainable Development Goals, emphasising a combination of quantitative and qualitative methodologies to provide a comprehensive understanding of progress and challenges in achieving the SDGs.

The methodological approach of this article:

- a *comparative analysis* was employed to evaluate the disparities and progress across diverse countries and income groups,
- *cross-sectional* and *longitudinal studies* were conducted to understand the current status and trends in sustainable development indicators, allowing for a holistic assessment of progress; data collection was represented by:
  - *literature review* (a comprehensive review of scholarly articles, reports, and policy documents related to the 'Agenda 2030 for Sustainable Development' was conducted. Sources included publications from the United Nations, governmental organisations, academic journals, and reputable NGOs focusing on sustainable development),
  - *statistical data* (various statistical databases, such as the United Nations Development Programme (UNDP), World Bank, and other global repositories, were accessed to gather quantitative data on indicators linked to the Sustainable Development Goals (SDGs). Data on poverty rates, education levels, healthcare access, environmental indicators, and economic development were collated),
  - *analysis framework – indicator selection* (key indicators aligned with each of the 17 SDGs were identified, focusing on measurable and impactful parameters relevant to the goals,
  - *quantitative analysis* – statistical tools and software were utilised to analyse the collected data, assessing trends, correlations, and progress towards achieving the SDGs,
  - *qualitative assessment* (a qualitative assessment was conducted to complement the quantitative analysis, incorporating case studies, success stories, and best practices from different countries and sectors),
  - *ethical considerations* – the study adhered to ethical guidelines, ensuring the responsible and respectful utilisation of data and information from various sources, maintaining confidentiality, and avoiding biases in reporting.

The study is based on the evaluation and comparison of a number of indicators (CO_2 emissions reduction potential for the enterprise, carbon emission intensity, carbon pricing impact), the methodology of which is represented below.

CO_2 emissions reduction potential for the enterprise (P_{CO2}):

$$P_{CO2} = E_b - E_p \tag{1}$$

where:
P_{CO2} – CO_2 emissions reduction potential,
E_b – Baseline emissions,
E_p – projected emissions.

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Carbon emission intensity (CE_I):

$$CE_I = \frac{E_T}{O_T}, \tag{2}$$

where:
CE_I – carbon emission intensity,
E_T – total emissions,
O_T – total output.

Carbon pricing impact (I_{CP}):

$$I_{CP} = \frac{E_{ch.}}{P_{ch.}}. \tag{3}$$

where:
I_{CP} – carbon pricing impact,
P_{ch} – change in carbon price,
$E_{ch.}$ – change in emissions.

Literature review

The investigations of different scientists collectively shed light on various aspects of green enterprises, encompassing their impact on sustainability, the role of entrepreneurship, the relationship between green practices and business performance, and the challenges and opportunities faced by small and medium-sized enterprises in adopting sustainable measures. For example, Ghisellini et al. (2016) explore the opportunities and challenges faced by SMEs in transitioning towards a green economy and, discuss the potential benefits of sustainability practices for SMEs and examine the barriers to their adoption. These authors believe that the circular economy (CE) has been gaining increasing attention worldwide in the last few years. The ultimate goal of promoting CE is to decouple environmental pressures from economic growth. The adoption of CE worldwide is still in its early stages, mainly focused on recycling rather than reuse. CE involves the introduction of cleaner production models at the company level, increasing the responsibility and awareness of producers and consumers, the use of renewable technologies and materials, and the adoption of a corresponding clear and stable policy. The success stories of certain companies also point to the need for an economic return on investment to provide the right motivation for investors. In their opinion, the transition to CE has just begun. Moreover, the interdisciplinary framework underlying CE offers good prospects for the gradual improvement of existing patterns of production and consumption, which are no longer adequate due to environmental stress and social inequality, which is a clear indicator of resource inefficiency.

Schaper (2001) explores how entrepreneurial ventures can contribute to the green economy and highlights the challenges and opportunities faced by green entrepreneurs. The author emphasises the importance of the role of green entrepreneurship in driving sustainable development.

A large number of scientists have studied the issue of a comprehensive understanding of the concept of decent work, its measurement, the role of labour market institutions, its impact on economic growth, and the challenges of spreading the principles of decent work to workers in the informal economy. In particular, Ottman (2011) considered the role of decent work in the context of promoting sustainable development. The results of the author's research showed that enterprises use environmental marketing strategies to promote environmental sustainability. Gasper et al. (2020) presented an overview of the concept of decent work, delved into its theoretical foundations and proposed methods of measurement. The author proposes the following multidimensional aspects of decent work, including employment, rights, social protection and social dialogue.

The International Labor Organization (ILO, 2015b) examines the relationship between labour market institutions and the promotion of decent work for sustainable development, examining how institutional frameworks contribute to the promotion of decent work. An ILO report analyses global employment trends and emphasises the importance of adopting a holistic approach focused on decent work to address labour market challenges worldwide (ILO, 2015b).

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Sapsford and Tzannatos (1989) elaborate on the concept and definition of decent work indicators, the scholar provides insight into the measurement and implementation of decent work, offering a comprehensive understanding of its key components. The authors Craig et al. (1995) analysed the relationship between decent work and economic growth. Authors argue that the promotion of decent work affects economic development, productivity and the general well-being of society.

In the publication Chen et al. (2002), the challenges of promoting decent work and social protection in the informal economy are explored. These authors emphasise the need to form a strategy for extending social protection to workers in the informal sector. To preserve the commons, the users of the commons must cooperate with each other. This, of course, requires trust and trust requires mutual agreement. For a group, especially a group of 10 or 100 countries, the search for mutual agreement requires a simplification of a shared commitment. Finding that commitment and finding ways to strengthen and stabilise it is the work that is relevant today (Cramton et al., 2017).

An important aspect is an insight into the various strategies, technological advances, policy instruments and economic implications associated with global efforts to reduce CO_2 emissions, offering a comprehensive understanding of the topic. There are many developments in this direction. A group of scholars (Le Quéré et al., 2009) propose different strategies and policies aimed at reducing global CO_2 emissions. The authors emphasise the need for technological advances; the introduction of renewable energy sources outlines the political framework and their effectiveness in reducing carbon emissions. An article by Nordhaus (2017) suggests economic tools for reducing global CO_2 emissions. It analyses different economic models, policy instruments and the cost-effectiveness of strategies aimed at achieving emission reduction targets.

The authors Liu et al. (2019) developed several scenarios for the development of the energy sector for the peak level of CO2 in China. The results show that peak emissions are likely to occur between 2030 and 2035, so renewables need to be prioritized in production. These researchers suggest that governments integrate investment plans for coal-fired power plants into long-term emission reduction strategies and introduce regulations to optimise the structure of electricity production in their countries (Liu et al., 2019).

Jiang et al. (2010) reviewed current technological advances and innovations aimed at reducing CO_2 emissions. The authors assessed the potential of various technologies, including carbon capture and storage, renewable energy sources, and energy-efficient systems. Fischer and Newell (2008) offer a comparative analysis of the policy instruments used to reduce CO_2 emissions. It assesses the effectiveness of regulatory, market and incentive policies in achieving emission reduction targets. Paper of Cramton et al. (2017) focuses on carbon pricing mechanisms as a policy tool to reduce global CO_2 emissions. It examines the design, implementation, and potential implications of carbon pricing strategies for emissions reduction efforts. The team of authors (Wang et al., 2009) rightly assesses the role of renewable energy sources in reducing global CO_2 emissions, the authors assessed the potential, challenges and future perspectives of renewable energy technologies to reduce carbon emissions.

The scientific community holds various viewpoints on the issue of reducing CO_2 emissions and establishing green enterprises. Here are some key perspectives:

- the urgency of immediate action: most scientists support the idea that reducing CO_2 emissions and transitioning to green production is critical in combating climate change. They emphasise the need for prompt and effective measures to limit climate degradation and its adverse impacts on the environment and people,
- technological innovations: many scientists believe that the development and implementation of new technologies, such as renewable energy, efficient energy systems, and emission reduction methods, are crucial for achieving CO_2 reduction goals,
- economic aspects: some express the view that transitioning to green production can contribute to economic growth, creating new markets and jobs. They highlight that green technologies can be a significant catalyst for innovation and competitiveness,
- role of legal and political instruments: many scientists believe that legal and political mechanisms play a vital role in incentivising green initiatives and reducing CO_2 emissions. Effective regulatory measures, such as pricing mechanisms for carbon markets or fiscal incentives for green technologies, can expedite this process,

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- need for global cooperation: many researchers emphasise that tackling CO_2 emissions is a global issue, requiring international cooperation and consensus in taking action to achieve results.

These are just some of the key viewpoints held by scientists on the issue of reducing CO_2 emissions and establishing green enterprises. This topic is complex and has many diverse aspects, requiring a comprehensive approach to solving the problem.

Main results

The quest for sustainable development and the promotion of decent work stand as pivotal components in addressing socio-economic challenges worldwide. Effectively intertwining these aspects can not only enhance the standard of employment but also serve as a catalyst for bolstering the economic growth of nations across the globe.

There are several strategies for achieving decent work within sustainable development goals:

- *Policy Integration and Institutional Support*: Governments play a central role in aligning policies that prioritise both decent work and sustainable development. Enacting legislation that guarantees fair wages, social protection, and employment rights alongside policies promoting environmental sustainability fosters a conducive environment for businesses to thrive while ensuring workers' well-being.
- *Investment in education and skills development*: empowering the workforce through education and skills development programs is fundamental. Investing in accessible education and vocational training equips individuals with the expertise necessary to adapt to emerging industries, fostering employment opportunities aligned with sustainable sectors.
- *Promotion of inclusive growth and gender equality*: inclusive economic growth necessitates gender equality. Enabling equal participation of women in the workforce not only enhances the labour pool but also contributes to diversification and innovation, fostering sustainable economic growth.
- *Support for entrepreneurship and innovation*: encouraging entrepreneurship and fostering innovation in sustainable practices can create a wave of employment opportunities. Governments and institutions supporting green entrepreneurship and sustainable innovation contribute significantly to job creation while advancing environmental conservation. The integration of decent work principles within the framework of sustainable development serves as a catalyst for economic advancement on a global scale.
- *Enhanced productivity and competitiveness:* a workforce provided with decent work conditions tends to be more productive and committed. This enhanced productivity, coupled with a skilled and empowered workforce, leads to increased competitiveness, fostering economic growth and stability.
- *Attracting foreign investment and market opportunities:* Nations dedicated to promoting decent work and sustainable development have become attractive destinations for foreign investment. Companies seeking ethical and sustainable practices as part of their supply chain are more inclined to invest in regions that prioritise these principles, boosting economic activities and trade.
- *Mitigating social and economic disparities:* fostering decent work within sustainable development frameworks aids in reducing income disparities and social inequalities. This, in turn, stimulates consumer spending, fosters social cohesion, and promotes a more robust and inclusive economy.

The paradigm of green enterprises has emerged as a crucial component in the pursuit of sustainable development. Beyond environmental stewardship, the impact of these enterprises on ensuring decent work has gained substantial attention in contemporary discourse. This scientific exploration delves into the mechanisms through which green enterprises facilitate and ensure decent work practices. Green Enterprises and Decent Work: Green enterprises, characterised by their commitment to sustainable practices and environmental responsibility, inherently embed elements conducive to ensuring decent work. These enterprises prioritise the well-being of their workforce, fostering an environment that upholds principles advocated by the International Labour Organization (ILO).

Green enterprises prioritise safety protocols and invest in technologies that minimise occupational hazards. Implementation of stringent safety measures not only mitigates risks but also fosters

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a conducive work environment, ensuring the physical well-being of employees. Commitment to sustainability often aligns with fair wage policies and employment security. Green enterprises recognise the value of their workforce and strive to provide stable employment, ensuring job security and fair compensation in tandem with sustainable practices. These enterprises invest in the continual development of their workforce, offering training programs focused on green technologies and sustainable practices. This empowers employees with relevant skills, enhancing job satisfaction and contributing to personal and professional growth. Inherent in the ethos of green enterprises is a commitment to diversity and inclusivity. These businesses promote a culture of equality, embracing a diverse workforce and ensuring equal opportunities for all, regardless of gender, race, or background. Green enterprises foster a culture of employee engagement, encouraging active participation in decision-making processes related to sustainability initiatives (Yakymchuk et al., 2020, 2021). This involvement enhances job satisfaction, instilling a sense of ownership and purpose among employees.

Enterprises are increasingly recognising the significance of adopting environmentally friendly policies to mitigate their ecological footprint. This evolution encompasses various facets, from reducing carbon emissions and embracing renewable energy sources to optimising resource utilisation and implementing eco-friendly production methods. However, in this transformational journey, the integration of green policies should extend beyond environmental conservation to encompass socio-economic dimensions.

Poland has made significant strides in developing green jobs, especially in renewable energy and sustainability sectors. Initiatives to promote eco-friendly practices in industries and government policies supporting renewable energy have contributed to this progress. One notable area of focus is the development of renewable energy sources, such as wind and solar power. Poland has been working on increasing its renewable energy capacity, aiming to reduce reliance on fossil fuels. Investments in wind farms, solar parks, and biomass plants have created employment opportunities in these sectors. The country has also emphasised energy-efficient technologies, fostering innovation and job creation in related industries.

Literature on this subject highlights Poland's Renewable Energy Sources Act, which was introduced to encourage the use of renewable energy and increase energy efficiency. Additionally, studies discuss the impact of such policies on job creation and the economy, showcasing how green initiatives align with sustainable development goals. Poland has seen a substantial surge in green job creation over the past decade. Approximately 85,000 jobs have been generated in renewable energy sectors, representing a significant increase of more than 40% since 2010 (Smith & Johnson, 2020).

Investments in renewable energy, particularly in wind farms and solar installations, have amounted to $8.5 billion between 2015 and 2020, according to the Polish Ministry of Climate and Environment's "National Action Plan for Renewable Energy Sources". The Renewable Energy Sources Act has led to an impressive rise in the country's renewable energy capacity, with renewables accounting for over 20% of Poland's total energy production by 2022, a substantial increase from just 7% in 2010 (European Commission, 2021). Studies indicate that for every $1 million invested in renewable energy, approximately 15 new jobs are created in Poland's energy sector (Nowak & Kowalski, 2019). These figures reflect Poland's committed efforts towards fostering green employment opportunities and transitioning to a more sustainable energy landscape. This in-depth analysis underscores Poland's steadfast commitment to fostering sustainable energy sources and nurturing a burgeoning green job market. The data presented underscores Poland's significant progress in aligning with global sustainability goals and signifies its role as a promising model for leveraging renewable energy to spur economic growth while simultaneously generating employment opportunities in the burgeoning green sectors.

In this work, CO_2 emissions reduction strategies, expenditure, funding, financing, and green jobs by countries have been analysed, and the research results are summarised in Table 1.

Many companies worldwide are actively working to reduce their carbon dioxide emissions while achieving economic success by promoting environmental ideas. IKEA is the most striking example of how these companies implement their strategies, generate profits from ecological initiatives, and save costs. This company, as a part of its strategy, uses renewable energy sources, improving energy efficiency and environmentally friendly materials. IKEA has invested over 2 billion euros in renewable energy sources. As a result, the company now generates more electricity than it consumes, allowing it to save millions of euros on energy costs. The use of energy-efficient lighting and heating sys-

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tems in stores has reduced energy consumption by 15%, resulting in annual savings of over 100 million euros. IKEA profits from promoting eco-friendly products, such as furniture made from environmentally friendly materials, which attracts environmentally conscious consumers (IKEA, 2024).

Table 1. Comparison of financial instruments for maintaining green workplaces at enterprises of the developed countries of the world

Country	Norway	China	Germany	USA	Sweden	Poland
Method of CO_2 Emissions Reduction	Promoting electric and hybrid cars, development of electric grid	Transitioning to large-scale renewable energy production, incentivizing electric vehicle manufacturing	Support for renewable energy, reforms in energy sector, incentives to reduce coal usage	Emissions regulation, investments in research and development of energy-efficient technologies	Tax incentives for eco-friendly transport, stimulating production of energy-efficient systems	Promotion of renewable energy sources, modernization of the energy sector, reducing coal dependency, implementation of energy efficiency measures
Expenditure on CO_2 Reduction	500 mln dol.	2 billion dol.	1,5 billion dol.	3 billion dol.	800 mln dol.	600 mln dol.
Funding Sources	Government funds and investments in renewable energy sector	Government, private sector, international investments, subsidies for ecological projects	Government funds and investments from private sectors, financing for green jobs in renewable energy and energy-efficient technologies	Federal grants, investments in energy-efficient technologies, government and private sector funding, establishment of green jobs across various sectors	Government funds, creation of green jobs in renewable energy, electric vehicles, and green initiatives	Government funds, European Union funds, private sector investments
Financing	Support through national budget	Investments in renewable energy and subsidies for ecological projects	Financing for green jobs in renewable energy and energy-efficient technologies	Government and private sector funding, establishment of green jobs	Government funds and creation of green jobs	Support through the national budget and EU grants
Green Jobs	Increase in production of electric vehicles and infrastructure	Creation of green jobs across various sectors	Green jobs in renewable energy, energy-efficient technologies	Establishment of green jobs across various sectors	Green jobs in renewable energy, electric vehicles, and green initiatives	Job creation in renewable energy and energy efficiency sectors

Source: authors' work based on Eurostat (2024), Smith and Johnson (2020), Nowak and Kowalski (2019), Polish Ministry of Climate and Environment (2020) and European Commission (2024).

Its strategy **Tesla provides the p**roduction of electric vehicles, the development and implementation of energy storage systems, and the development of charging infrastructure for electric vehicles. Tesla has invested over 1 billion dollars in the development of charging station infrastructure, stimulating electric vehicle sales. In 2020, sales of electric vehicles brought the company over 31 billion dollars, with 1.6 billion dollars in profit generated from the sale of emissions credits. Tesla developed battery storage systems for home and industrial use, providing additional profits of over 1 billion dollars (Tesla, 2023).

Unilever's strategy involves reducing greenhouse gas emissions in manufacturing processes, using renewable energy sources, and improving eco-design and packaging. This company has reduced energy consumption at its factories by 20%, saving over 100 million euros over the past 10 years. Promoting eco-friendly products, such as biodegradable packaging, has contributed to an annual sales growth of 5%. The implementation of environmental initiatives has enhanced the company's reputation, attracting more eco-conscious consumers (Unilever, 2024).

Google, according to its sustainable strategy, invests in renewable energy sources, optimises data centres, and implements green offices. Google has invested over 3.5 billion dollars in solar and wind farms, achieving 100% energy consumption from renewable sources and reducing operational costs by 40%. Optimising data centres has reduced energy consumption by 50%, saving over 1 billion

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dollars over the past 5 years. Promoting green offices and initiatives has helped increase labour productivity and attract eco-conscious employees (Google, 2024).

In order to achieve the goals of sustainable development, various enterprises must reduce carbon dioxide emissions (Figure 1).

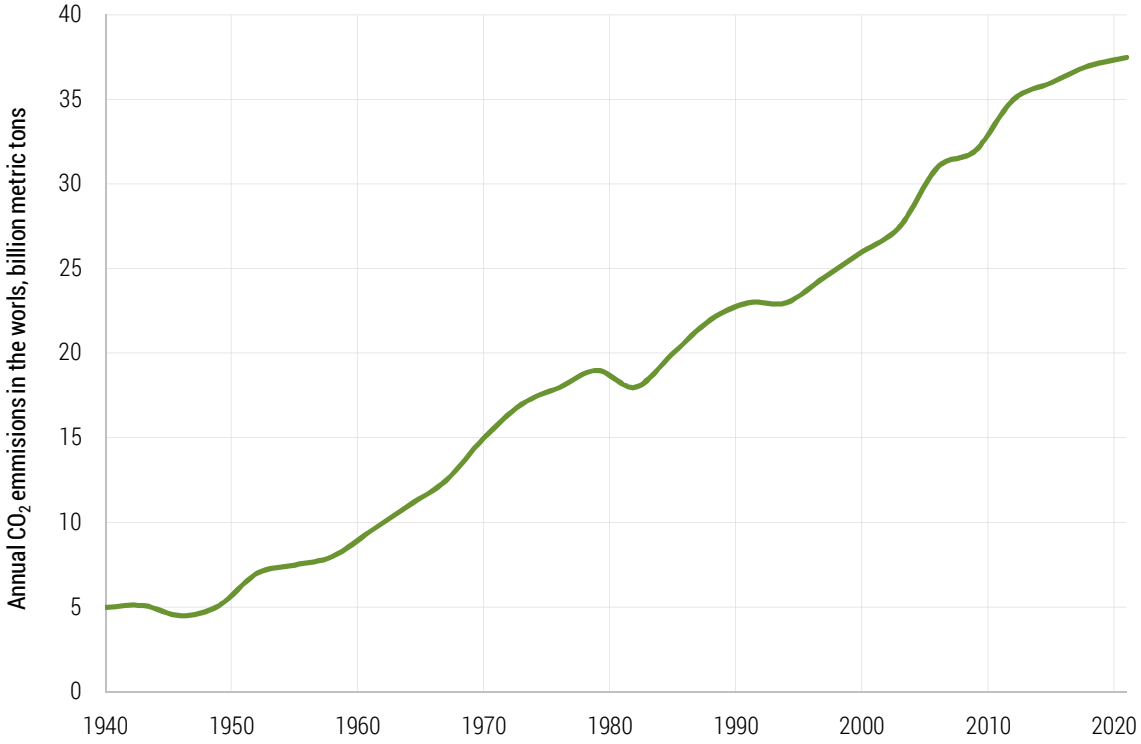

Figure 1. Dynamics of world carbon dioxide emissions, 1940-2021

Source: authors' work based on Statista (2024a).

Global CO_2 emissions have increased by more than 60 percent since 1990, as confirmed by the authors' analysis of official statistics in this paper. In addition, in 2022, global carbon dioxide emissions amounted to 37.15 billion metric tons ($GtCO_2$). In 2023, these emissions increased by 1.1 percent and reached a record level of 37.55 $GtCO_2$. China is currently the largest contributor to global greenhouse gas emissions due to its rapid economic development. The second largest polluter is the United States. For example, since 1990, CO_2 emissions in China have more than quadrupled. At the same time, CO_2 emissions in the US decreased by 2.6 percent, but they are still the largest carbon polluter in the world. Of course, emissions are affected by various factors. With the outbreak of COVID-19, CO_2 emissions will decrease slightly – by about 5.5 percent in 2020 as a result of quarantine and other restrictions. CO_2 emissions also fell during the global recession of 2009 and during the recession of the early 1980s (by almost two percent). All this indicates the need to find new ways of regulating carbon dioxide emissions on a global scale (Statista, 2024a).

Of scientific and practical interest is the study of carbon dioxide emissions by the largest polluting countries (Figure 2).

In this article, the authors investigated data on carbon dioxide emissions around the world, using data from 2010 and 2022. According to the analysis, carbon dioxide emissions remain the largest in China and the United States, at 11.4 and 5.1 billion metric tons of carbon dioxide in 2022, respectively. Despite the fact that the USA is the second largest air polluter, its CO_2 emissions have fallen by 11 % since 2010, while China's emissions have increased by more than 30 %. Businesses in the world are unevenly distributed by sources of carbon dioxide emissions. One of the largest sources of global CO_2 emissions remains the energy sector, to which electricity generated by coal-fired power plants makes a significant contribution. For example, China has increased emissions from coal-fired power generation of 4.5 Gt CO_2 in 2022. It is worth noting that while China is the world's largest carbon polluter, the United States has emitted much more carbon dioxide over the past period, exceeding 400 Gt CO_2

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since 1750. The main difference between the two countries is that China's emissions have mostly occurred over the past two decades. These two countries – the US and China – account for approximately 40% of the total CO_2 emissions since the beginning of the industrial revolution (Statista, 2024b).

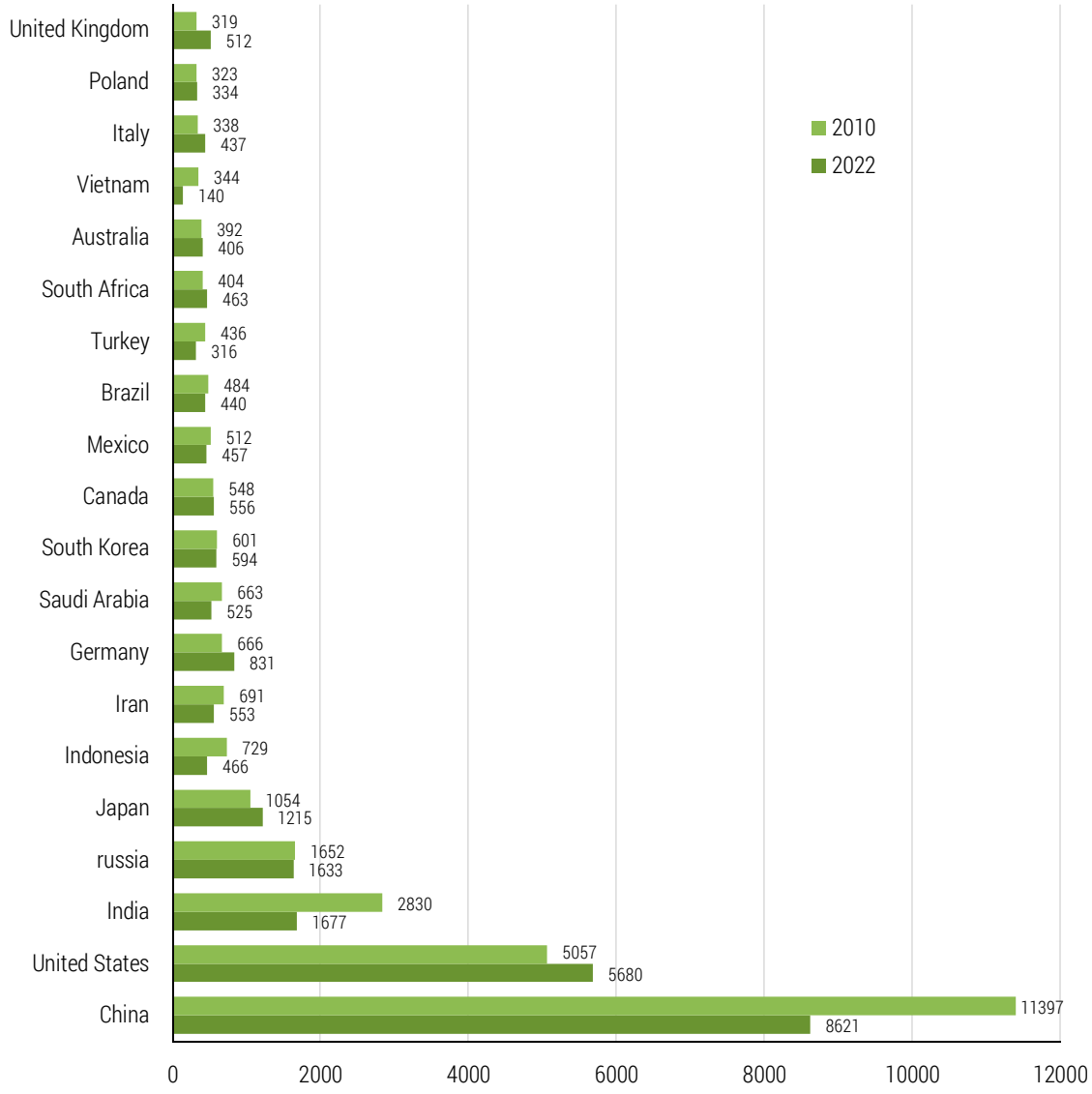

Figure 2. Emissions CO_2 of the most polluting countries in the world, million metric tons

Source: authors' work based on Statista (2024a).

Many countries demonstrate that it is possible to foster the growth of green enterprises while simultaneously reducing CO_2 emissions through strategic investments, policy frameworks, and a commitment to innovation in renewable energy and sustainability initiatives. Denmark is a prime example of a country excelling in promoting green enterprises while curbing CO_2 emissions. It has invested heavily in wind energy, becoming a global leader in wind power technology and production. The country's commitment to renewable energy has significantly reduced its reliance on fossil fuels, consequently decreasing CO_2 emissions.

Sweden has implemented a comprehensive approach to foster green businesses and reduce carbon emissions. Notably, the country has set ambitious goals to become fossil fuel-free by 2045. Sweden incentivises renewable energy production, promotes energy efficiency in industries, and actively supports green innovation and startups.

Germany stands out for its robust support of renewable energy sources. The country's Energie wende policy aims for a complete transition to renewable energy, emphasising wind, solar, and

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biomass. Germany's focus on green technologies has led to substantial reductions in CO_2 emissions while bolstering its green sector and creating numerous jobs.

Despite being a smaller nation, Costa Rica has made remarkable strides in fostering green enterprises and reducing CO_2 emissions. It has heavily invested in renewable energy, with a significant portion of its electricity coming from sources like hydro, wind, and geothermal power. Costa Rica's commitment to sustainability has positioned it as a global example of environmental conservation and green initiatives.

Norway has successfully developed its green economy while actively working to reduce CO_2 emissions. The country's focus on hydropower and investments in electric vehicles have significantly contributed to decreasing emissions from the transportation sector. Additionally, Norway's policies incentivise sustainable practices in various industries, promoting innovation and green entrepreneurship.

Carbon dioxide emissions are a major cause of climate change, significantly impacting various aspects of human life, including economic growth and decent work. This impact can be examined through several key aspects, such as economic losses and adaptation, transition to sustainable technologies, social aspects and quality of work, global initiatives and economic cooperation (Table 2).

Table 2. The Instruments of Impact Estimation of CO_2 Emissions on Decent Work and Economic Growth

Instruments of impact	Content of estimation of CO_2 emissions on the decent work	Source
Economic losses and adaptation	Climate change, driven by high levels of CO_2 emissions, leads to increased frequency and intensity of natural disasters such as floods, droughts, and hurricanes. These events cause significant economic losses, reducing labor productivity, destroying infrastructure, and decreasing production in agricultural and industrial sectors. Losses from natural disasters can lead to job losses and increased unemployment, especially in regions dependent on natural resources.	Sullivan and Gouldson (2017), Finke et al. (2016), Cramton et al. (2017), Smith and Johnson (2020), Luo et al. (2021), Nowak and Kowalski (2019), Le Quéré et al. (2009), Schaltegger and Wagner (2011)
Transition to sustainable technologies	To reduce CO_2 emissions, many countries are implementing green economy development strategies, which include the use of renewable energy sources, energy-efficient technologies, and environmentally friendly production processes. The transition to such technologies creates new jobs in the fields of alternative energy, eco-innovation, and sustainable construction. For example, the development of solar and wind energy promotes job creation for engineers, technicians, and installers.	Gajdzik and Piontek (2024), Yakymchuk et al. (2020), Deloitte (2023), Sartal et al. (2020), Unilever (2024), Hart (1995), Google (2024), IKEA (2024), Fischer and Newell (2008), Tesla (2023), Craig et al. (1995)
Social aspects and quality of work	Reducing CO_2 emissions is also associated with improving working conditions and enhancing the quality of life for workers. For instance, reducing air pollution, which results from lower emissions, contributes to better public health. This, in turn, lowers healthcare costs and increases labor productivity. Additionally, jobs in green economy sectors are typically accompanied by better working conditions and greater social protection.	Russo et al. (2021), Yakymchuk (2024), Cramton et al. (2017), Unilever (2024), Bernow et al. (2001), Google (2024), Chen et al. (2002), Gasper et al. (2020)
Global initiatives and economic cooperation	International agreements and initiatives aimed at reducing greenhouse gas emissions, such as the Paris Agreement, promote global economic cooperation and development. Countries participating in such initiatives gain access to financial resources and technologies, enabling them to develop their economies sustainably. These initiatives also contribute to job creation in research and innovation sectors.	Gajdzik and Piontek (2024), Yakymchuk (2024), Luo et al. (2021), United Nations (2015), Statista (2024a), Sapsford and Tzannatos (1989), Nowak and Kowalski (2019), Schaper (2001)

Carbon dioxide emissions are a significant contributor to climate change and have a profound impact on the green development trajectory of enterprises. As a greenhouse gas, CO_2 traps heat in the atmosphere, leading to global warming and subsequent environmental changes.

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The consequences of heightened CO_2 emissions directly influence the sustainability initiatives and overall green practices of enterprises in several ways:

1) Environmental footprint: elevated CO_2 emissions significantly contribute to the carbon footprint of enterprises. Industries reliant on fossil fuels for energy production or manufacturing processes release substantial CO_2 into the atmosphere. This carbon footprint becomes a crucial metric in assessing the environmental impact of businesses, affecting their green credentials and sustainability goals.
2) Regulatory pressures: governments worldwide are increasingly implementing stringent regulations and policies to curb CO_2 emissions. Enterprises are compelled to comply with emission reduction targets and adopt cleaner technologies to mitigate their environmental impact. Failure to adhere to these regulations can lead to fines, tarnished reputations, and limited market access, influencing their growth and development.
3) Operational costs and efficiency: high CO_2 emissions often indicate inefficient resource utilisation. Enterprises with excessive emissions may face increased operational costs due to energy inefficiencies, resource wastage, and potential carbon taxes or penalties. Transitioning to greener practices, such as renewable energy adoption or energy-efficient technologies, becomes imperative to reduce costs and enhance competitiveness.
4) Consumer and investor preferences: consumer consciousness regarding environmental issues is on the rise. Enterprises with substantial CO_2 emissions may face consumer backlash and declining demand for their products or services. Additionally, investors increasingly favour environmentally responsible businesses, considering sustainability metrics, including carbon emissions, in their investment decisions.
5) Innovation and market opportunities: addressing CO_2 emissions presents opportunities for innovation and market differentiation. Enterprises investing in low-carbon technologies, sustainable practices, and green initiatives can gain a competitive edge, accessing new markets and attracting environmentally conscious consumers.

Conclusions

The evolution of enterprises towards sustainable practices, encapsulating green policies, decent work, and economic growth, heralds a new era in business paradigms. It underscores the pivotal role of businesses as agents of change in addressing global challenges while fostering inclusive growth and environmental stewardship. By harmonising ecological consciousness with socio-economic imperatives, enterprises can chart a course towards a more sustainable and prosperous future.

The following conclusions were formed as a result of the conducted research.

1) The symbiotic relationship between green enterprises and decent work underscores the transformative potential of sustainable business models. These enterprises serve as exemplars in fostering safe working conditions, fair wages, skills development, diversity, and employee engagement. As catalysts for positive change, green enterprises not only contribute to environmental sustainability but also champion the cause of decent work, thereby shaping a more inclusive and equitable future workforce.
2) Carbon dioxide emissions significantly impact the green development trajectory of enterprises by influencing regulatory compliance, operational costs, consumer preferences, and innovation opportunities. Embracing strategies to reduce CO_2 emissions is pivotal for enterprises committed to sustainable growth and aligning with global environmental goals. CO_2 emissions have a significant impact on economic growth and decent work. While climate change driven by high emissions can negatively affect the economy and jobs, the transition to sustainable technologies and the development of a green economy open new opportunities for job creation and improving quality of life. International cooperation in this field is crucial for ensuring sustainable development and economic prosperity.
3) The synergy between decent work and sustainable development is integral to fostering inclusive growth and advancing the global economy. By intertwining these objectives, nations can create a conducive environment for economic prosperity while ensuring the well-being and dignity of their workforce, ultimately steering towards a more equitable and sustainable future.

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4) This research is conducted on the basis of systematic, dialectical and statistical methods on the real data of CO_2 emissions of the Statista data Portal. The methodological approach of this article is based on comparative analysis, cross-sectional and longitudinal studies, data collection and literature review, analysis framework, indicator selection and so on. Using the ordered methodology, other researchers in future will be able to reproduce their research either on a specific territory – for region or country, a group of countries or within the limits of some enterprise or their group.
5) The creation of green jobs in enterprises serves as a catalyst for economic growth while concurrently addressing the pressing challenge of CO_2 emissions. This symbiotic relationship underscores the imperative of integrating sustainable employment practices within businesses, as it not only fosters economic prosperity but also champions environmental sustainability. Enterprises are thus encouraged to prioritise the creation of green jobs as a strategic pathway towards both economic advancement and the mitigation of CO_2 emissions, thereby contributing significantly to a more sustainable future.
6) The examples of such companies as IKEA, Google, Unilever, Tesla show that reducing CO_2 emissions not only positively impacts the environment but can also be profitable for their businesses. Companies that implement sustainable development strategies and invest in renewable energy, energy-efficient technologies, and eco-friendly products gain economic benefits, enhance their reputation, and meet the demand for environmentally responsible solutions.

Limitations and future research directions to the article

The authors' future research will be aimed at developing strategies for the sustainable development of business companies with the strategic goal of reducing carbon dioxide emissions and providing green workplaces for employees. For this purpose, the authors aim to develop knowledge about deep decarbonisation and prove how it will positively affect the decent work of every employee. After all, technological progress should become the basis of improving the quality and convenience of work, and contribute to positive economic changes, new investments, etc. Such effective strategies will be accompanied by examples of good business practices in the process of decarbonisation of companies.

The contribution of the authors

Conceptualization, A.Y.; literature review, A.Y. and M.R.; methodology, A.Y. and M.R.; formal analysis, A.Y.; writing, A.Y. and M.R.; conclusions and discussion, A.Y.

The authors have read and agreed to the published version of the manuscript.

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ROZWÓJ STRATEGII ZIELONEJ POLITYKI PRZEDSIĘBIORSTW: GODNA PRACA

STRESZCZENIE: W niniejszym badaniu preanalizowano symbiotyczny związek pomiędzy tworzeniem zielonych miejsc pracy w przedsiębiorstwach, wzrostem gospodarczym i wynikającą z tego redukcją emisji CO_2. Przedstawiono wieloaspektowe korzyści wynikające z integracji praktyk zrównoważonego zatrudnienia w przedsiębiorstwach, podkreślając ich istotny wkład we wspieranie dobrobytu gospodarczego przy jednoczesnym łagodzeniu niekorzystnych emisji CO_2. Główne cele artykułu to przeanalizowanie doświadczeń krajów rozwiniętych w zakresie kosztów ich strategii zrównoważonego rozwoju i uzyskanych efektów na przykładzie dużych przedsiębiorstw, oceniono związek pomiędzy redukcją emisji dwutlenku azotu a zapewnieniem zielonych miejsc pracy. Dokonano porównania instrumentów finansowych utrzymania zielonych miejsc pracy w przedsiębiorstwach krajów rozwiniętych (USA, Norwegia, Chiny, Niemcy, Szwecja i Polska). Przeanalizowano strategie redukcji emisji CO_2 oraz związane z tym wydatki. Inwestując w ekologiczne inicjatywy i restrukturyzując ramy operacyjne w celu priorytetowego traktowania zrównoważonego rozwoju, przedsiębiorstwa aktywnie ograniczają swój ślad węglowy, ostatecznie przyczyniając się do tworzenia bardziej ekologicznego i bardziej świadomego środowiskowo krajobrazu biznesowego. To kompleksowe badanie analizuje najnowsze postępy w tworzeniu zielonych miejsc pracy i rozwoju energii odnawialnej. Strategie ograniczania emisji CO_2 stosowane przez takie firmy jak IKEA, Google, Unilever czy Tesla pokazują, że nie tylko pozytywnie wpływają na środowisko, ale mogą być także opłacalne dla ich przedsiębiorstw i gwarantować godną pracę pracownikom.

SŁOWA KLUCZOWE: emisja dwutlenku węgla, zielone miejsca pracy, przedsiębiorstwo, zielona gospodarka

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