

# The contribution of companies' ESG transformation to global sustainability

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**Abstract.** GHG emissions anywhere in the world affect the global atmosphere. Thus, the deterioration of the emissions situation in one region is not a regional but a global problem. Most developed countries have already announced ambitious goals in the field of green energy, in particular, they supported the transition to electric vehicles. The ongoing geopolitical transformation has accelerated these efforts and prompted many governments to intensify them to further reduce dependence on Russian oil and gas and hydrocarbons in general. However, the accelerated energy transition raises issues related, in particular, to the life cycle, processing and disposal of equipment involved in energy transformation, renewable energy, and electric vehicles. Over the years, the problem of the impact of business on the environment has become increasingly popular and relevant. As the consequences of environmental neglect become more and more evident over time, it is important for all stakeholders to some extent to see a green transformation of operations and supply chains (SCs).

## 1 Introduction

In ratings, as well as in company statements and reports, information about the state of their CPU is often overlooked or deliberately hidden (the so-called greenwashing), instead, attention is focused on less important, but easily achievable indicators. The root of this problem lies largely in the voluntary nature of the disclosure of information about the CPU. But even more dangerous is that some companies are using selective disclosure strategies (fig.1). Often this leads to a complete lack of representative information about the real state of the environment and the impact of the company's CPU166. Diversity and lack of coordination in regulation between countries can lead to carbon leakage [1]. This means that firms make decisions about where to locate their production based on existing environmental policies and regulations. Given the heterogeneity of environmental policies in different countries, the behavior of multinational companies in relation to the location of production is determined by the possibility of reducing costs (including for environmentally friendly technologies), since the costs of transferring polluting activities abroad are lower compared to the costs of environmental modernization of production. Cross-border investment by multinational companies in 2017 accounted for 50% of the gross domestic product (GDP) of OECD countries. From 1970 to 2010, the share of global value added in manufacturing for the G7 countries fell from 71% to 46%. This share has shifted to

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developing countries, especially China. Despite their economic importance, little is known about the extent to which, in response to tightening environmental policies, multinational companies distribute polluting activities around the world. Understanding the relationship between the environmental policies of countries and the production decisions of multinational firms will help policy makers and governments effectively address the emerging challenges of both climate change and pollution in general.



**Fig. 1.** A guide to the Supply Chain industry

In particular, many companies located in the G7 countries over the previous decades moved the dirtiest productions to developing countries (both within the companies and by transferring them to their suppliers). The fragmentation of global CPUs has increased to the point where it is impossible to determine where the many components of products are produced. One of the key factors for deciding on the location of production facilities is the opportunity for so-called environmental arbitrage - the use of differences in environmental legislation and law enforcement in different countries [2]. At the moment, most companies publish or declare only their Scope 1 and 2 emissions, that is, direct emissions from the enterprise during production and emissions from consumed electricity. Improved Scope 3 emission declaration practices and inclusion of these emissions in ESG rating agency criteria could solve or at least reduce or mitigate the associated risks of greenwashing. The problem with Scope 3 emissions remains the same as with other ESG-related criteria - there is no generally accepted way to accurately and universally measure them. Another important issue with Scope 3 reporting and estimating emissions is that while Scope 3 emissions are linked to a company's ESG footprint, they are not controlled by the company itself. As a result, in some cases, a company may not have access to information on emissions and, accordingly, cannot provide rating agencies with the data necessary for the assessment procedure. A request for this data could also potentially be denied by companies in the GC, as disclosure would lead to the discovery of greenwashing or negative environmental performance of these suppliers, hidden poor ESG performance [3]. Another reason for the lack of objective data on Coverage 3 may be the complexity, branching, and

often opacity of the CPU. This problem is especially relevant for SME companies that do not have the ability to conduct a full-fledged CPU audit. It is assumed that the introduction of digital and blockchain technologies should help create the transparency and traceability necessary for an objective assessment of Scope 3.

## **2 Research Methodology**

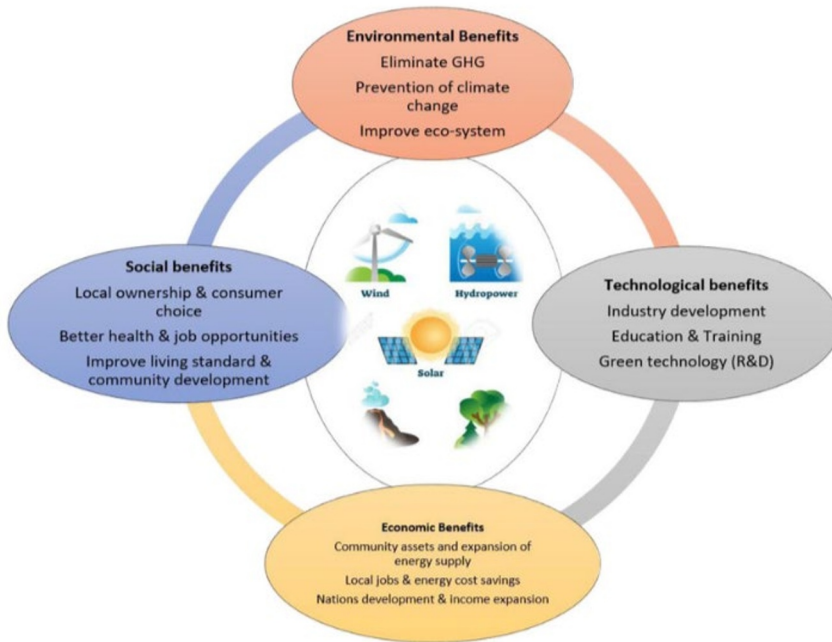
According to the Global CV Report published by the Carbon Disclosure Project, a company's average CV carbon emissions are more than 5 times the direct emissions of companies. Therefore, in order to understand whether a company's products are truly green, it is necessary to know whether the company's suppliers are green [4]. This requires the creation of monitoring mechanisms, which, in turn, determines the need for appropriate technologies and the introduction of rules based on objective and complete measurements of the carbon, water, and toxic footprint of the CP.

Technology is changing rapidly and a significant problem is the export of used equipment, products, vehicles to developing countries, which exacerbates the problems of recycling. According to a UN report, between 2015 and 2018, the US, Japan and the EU exported 14 million used passenger cars with internal combustion engines (ICEV), with 70% of them going to developing countries in Africa, Eastern Europe, Asia, the Middle East and Latin America. The end-of-life vehicles directive (2000/53/EC) requires vehicle manufacturers to take extended liability for their vehicles and components after use. Under it, vehicle manufacturers are either responsible for returning their products for the ultimate purpose of reuse, recycling or recovery, or, alternatively, are required to delegate responsibility to a third party.

## **3 Results and Discussions**

One of these objectives is to significantly decrease the nation's energy consumption by 40% by the year 2030. This reduction in energy consumption serves a dual purpose: firstly, it contributes to the conservation of valuable resources, and secondly, it plays a pivotal role in minimizing the country's carbon footprint. These goals are to be attained by implementing a series of energy-efficient technologies and adopting sustainable practices. For instance, energy-saving measures will be employed in constructing buildings, ensuring that they are designed and operated in an environmentally friendly manner. Furthermore, there will be a concerted effort to promote the use of energy-efficient appliances throughout the nation. These initiatives align with the broader vision of the Saudi Green Initiative to drive substantial positive changes in the realm of environmental conservation and sustainable living. By optimizing energy consumption, Saudi Arabia aims to set an example for the world and lead the way in mitigating the effects of climate change.

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**Fig. 2.** Development of alternative energy

There are two aspects to this: the lack of a proper structure for the disposal and handling of end-of-life vehicles in Third World countries, and the uncontrolled handling of vehicles when they are discarded. Often there are problems with the emissions system (the catalytic converter and diesel particulate filter are missing or can be specially removed) and the vehicles are below the Euro 4/IV emission standard. Thus, many of these vehicles are responsible for high emissions of pollutants, particulate matter, NO<sub>x</sub>, CO<sub>2</sub> and reduced road safety in importing countries. On the other hand, it also means the loss of valuable raw materials for exporting countries. Due to the high cost of metals, an international black market for stolen catalytic converters has formed. This causes global climate damage and harms the health of local residents. At the same time, the introduction of new vehicle emission requirements by developed countries stimulates an increase in the export of vehicles with high emissions to third world markets [9]. There is also the risk of losing secondary raw materials, making the transition to a circular economy difficult. Although, for example, in the Netherlands there is a recycling fee for new cars, only one in three goes to waste in the Netherlands, which prevents disposal under controlled conditions and with a high degree of reuse of the material. Since there is a huge market for cross-border semi-legal trade in used vehicles inside and outside the EU, a coordinated approach between countries is essential [10]. Vehicles aged 16 and over have a low emission standard (0, 1, 2 or 3) and enter Africa, Central Europe, the CIS region and South America. Japan exported 1,026,098 used cars worth about 619.9 billion yen (\$4.6 billion) in 2021, according to statistics from the Japanese Ministry of Finance. The largest part of these cars (15%) went to Russia [11]. This is 153,271 vehicles worth 98.7 billion yen (\$750 million). In 2022, the volumes have grown even more. A similar problem arises with used electric vehicles. Some countries have abolished customs duties and VAT, which made buying used electric vehicles profitable.

## 4 Conclusions

In the pursuit of sustainability, the framework of the Sustainable Development Goals (SDGs) was introduced, alongside the integration of Environmental, Social, and Corporate Governance (ESG) principles into corporate culture. These components work in harmony to enhance a company's competitiveness and align it with international standards. Importantly, the very concept of development has undergone a transformation. It now emphasizes responsible utilization rather than mere investment, necessitating a shift in how businesses approach their operations. ESG has evolved into a pivotal metric for evaluating a company's attractiveness to investors. Companies that disregard environmental and sustainable development considerations find themselves relegated to a lower tier in the corporate landscape. This shift underscores the growing significance of ESG factors in shaping the future of business.

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