

A Climate-Based Analysis of Pfizer's ESG Strategy

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Introduction

In recent years, Pfizer has transitioned from being known as a major pharmaceutical company to a household name synonymous with global healthcare leadership. Due to its rapid development and distribution of the COVID-19 vaccine, Pfizer has not only been able to save countless lives but also significantly expand its operations, delivering its products to millions of people across 180 countries. Along with such a reach inevitably comes a substantial environmental footprint, one that demands a rigorous and responsible strategy.

This paper aims to delve into the environmental impacts associated with Pfizer's expansive operations and look into the effectiveness and comprehensiveness of its Environmental, Social, and Governance (ESG) strategy, from a climate-perspective. Pfizer has demonstrated a longstanding commitment to environmental sustainability, evidenced by a significant reduction of 67% in Scope 1 and 2 greenhouse gas emissions from 2001 to 2020 (*Environmental Sustainability* 2024). The company's proactive stance on climate issues is further highlighted by its early adoption of Science Based Targets initiative (SBTi) validated goals in 2015, showcasing its dedication to scientifically grounded environmental actions (SBTi, 2024).

Pfizer's current ESG strategy is ambitiously centered around achieving net-zero carbon emissions by 2040. This goal underscores a broader commitment to significant investments in renewable energy sources and the enhancement of energy efficiency across its global operations. A large part of Pfizer's impact report includes its assessment of where it stands in relation to the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. These

assessments are crucial for ensuring the resilience of Pfizer's research, manufacturing, and commercial activities against climate-related risks while maintaining transparency in reporting progress, risks, and opportunities.

This paper will highlight three areas where Pfizer's ESG commitments and climate-related actions can improve to better align with its global influence and operational scale.

Background

Pfizer Inc. was founded in 1849 in New York by Charles Pfizer and Charles F. Erhart. Since its humble origins in New York, Pfizer has since become a major player in the pharmaceutical and biotechnology industries, impacting public health worldwide. The company develops and produces a wide range of pharmaceutical drugs and vaccines, including immunology, oncology, cardiology, and neurology. Some of its top products include the Pfizer-BioNTech COVID-19 vaccine and various other significant medications that address chronic and life-threatening conditions.

Pfizer operates on a global scale with its products reaching approximately 618 million people across more than 180 countries in 2023 alone. The company maintains around 37 manufacturing sites worldwide, with a commitment to innovation, safety, and quality in drug production. Pfizer's extensive research and development efforts are aimed at delivering breakthrough medicines and vaccines, ensuring they meet the highest quality standards through rigorous testing and clinical trials.

Pfizer's operations are not just limited to drug development and manufacturing. The company is deeply involved in various social responsibility initiatives, focusing on areas such as health literacy, patient safety, ethical business practices, and environmental sustainability. Pfizer

aims to advance healthcare and wellness globally, working closely with healthcare providers, governments, and communities to improve access to affordable healthcare (*Our purpose* 2024).

Pfizer's ESG Strategy

In its 2023 Impact Report, Pfizer presents a picture of the company's commitment to sustainable practices and health equity worldwide (*Pfizer 2023 impact report* 2023).

On the social front, Pfizer's commitment to enhancing global health outcomes is evident in its extensive development and distribution of medicines and vaccines. The company has made strides in expanding access to healthcare in underserved regions, highlighting its dedication to health equity. Moreover, internal policies and programs aimed at bolstering diversity, equity, and inclusion within its workforce demonstrate Pfizer's commitment to social responsibility.

Pfizer's governance structure facilitates rigorous oversight and ethical business practices, ensuring decisions are made in the best interests of stakeholders and align with high standards of corporate conduct. This is complemented by Pfizer's active engagement with stakeholders through transparent reporting and dialogue, ensuring that the company remains responsive to shareholder and societal expectations.

Pfizer's environmental strategy is ambitiously structured around achieving net-zero carbon emissions by 2040, a target indicative of its proactive stance on climate change. The company has made considerable advancements by investing in renewable energy sources and implementing energy efficiency measures across its operations. These efforts are part of a broader environmental initiative that includes significant reductions in greenhouse gas emissions, as evidenced by a 13.9% decrease from the 2019 baseline (*Environmental Sustainability* 2024). Pfizer's report further

mentions conducting several life cycle assessments for various products to better understand the environmental impacts of their vaccines and waste, etc.

Compared to its peers, Pfizer has taken several measures to embed environmental sustainability into the fabric of its governance and strategies. Particularly noteworthy is Pfizer's integration of a comprehensive range of climate-related considerations into its board-level discussions and decision-making processes. This includes not only direct climate action measures but also preparing for potential financial impacts related to climate change, which showcases a forward-thinking approach to corporate sustainability (*CDP Questionnaire*, 2023). The inclusion of climate change considerations in executive compensation is a particularly progressive step. Linking climate performance to executive pay not only emphasizes the importance Pfizer places on achieving its environmental targets but also aligns the interests of key decision-makers with the company's long-term sustainability goals. This could serve as a model for other corporations looking to integrate sustainability more deeply into their corporate cultures and operational practices.

Pfizer's 2023 Impact Report articulates a clear and proactive approach to ESG integration, emphasizing the company's commitment to sustainability, social responsibility, and ethical governance. Through continuous improvement and strategic alignment of ESG objectives with corporate goals, Pfizer not only enhances its industry leadership but also contributes positively to global healthcare and sustainability. This approach not only supports long-term value creation but also aligns with global efforts to foster a sustainable future.

Analysis: Three Areas of Improvement

In evaluating Pfizer's ESG goals, particularly in the context of its climate strategy, three significant areas emerge where further development might be necessary. These areas are pivotal not only in reaching their environmental objectives but also in sustaining their business operations in an increasingly environmentally conscious market.

First, the scalability of renewable energy sources presents a considerable challenge. Pfizer's ambition to transition entirely to renewable energy is commendable; however, the pharmaceutical industry's heavy reliance on stable and continuous energy supplies makes this transition complex. Manufacturing and research and development (R&D) facilities are often situated in regions lacking robust renewable energy infrastructure. This gap can hinder the scalability of Pfizer's renewable energy initiatives, potentially delaying or limiting their ability to meet energy needs sustainably.

Second, managing emissions across supply chains is another critical area for Pfizer to further explore. Pfizer aims to reduce emissions across its value chain by 90%, targeting Scope 3 emissions which encompass indirect emissions from various activities like raw material sourcing, product distribution, and employee commuting (*Pfizer 2023 impact report 2023*). These emissions typically constitute the bulk of a company's carbon footprint. The challenge lies in the need for extensive internal changes and the collaboration with a broad network of suppliers and partners, especially across a wide spread of activities and geographies.

Third, Pfizer needs to account for the impact of rapid technological advancements. Staying ahead of other competitors with technological advancements is crucial; however, this also creates a unique challenge with the need to reduce emissions and maintain energy efficiency. The rise of artificial intelligence and machine learning models create a ripe environment for innovation, while also posing challenges with energy consumption.

While Pfizer's ESG strategy sets a robust framework for climate action, these identified areas require further attention to ensure that the strategies employed are effective, scalable, and sustainable. Enhancing capabilities in these areas could significantly strengthen Pfizer's ability to meet its environmental commitments and contribute positively to global sustainability efforts.

Scalability of Renewable Energy Resources

Scaling renewable energy resources globally presents a myriad of challenges, many of which stem from geographical, technological, and economic barriers.

One of the primary challenges in scaling renewable energy resources is the variability in geographical potential for resources like solar and wind energy. Regions such as Scandinavia and the North Sea are more suited for wind farms, while sunny regions like North Africa and the southwestern United States are ideal for solar panels. However, the necessary infrastructure to harness and transmit this energy often does not exist, particularly in remote or underdeveloped areas. As technology evolves, integrating new systems with existing grid infrastructures poses significant technical challenges. Grids designed for consistent power flow from fossil fuels must adapt to the variable nature of renewable energy sources. This integration requires sophisticated technology to manage and store energy, ensuring consistent supply despite variable weather conditions affecting wind and solar energy production. Building this infrastructure is costly and logistically challenging, involving extensive planning and coordination to integrate with existing energy grids. The World Energy Council (2021) notes that infrastructure development must consider long-term sustainability and capacity growth to be effective.

According to the KPMG Report, “over 84% of industry executives reported substantial delays and, in some cases, even project abandonment due to current market challenges” (*Turning*

the tide in scaling renewables 2023). The initial investment required for renewable energy technologies can be prohibitively expensive, especially for developing countries. The International Renewable Energy Agency (IRENA, 2020) reports that financing renewable energy projects often involves high upfront costs, although operational costs may be lower compared to fossil fuels. The economic burden is compounded in areas lacking existing energy infrastructure, where the costs of new installations and grid integration can deter renewable projects.

Finally, while Pfizer is currently exploring Renewable Energy Certificates (RECs) to meet its renewable energy targets, RECs are not sufficient for meeting its goals. One key issue with RECs is that they do not necessarily require a company to directly change its energy consumption or carbon-emitting behaviors. Instead, they allow companies to purchase certificates that represent renewable energy generated elsewhere, which can create a disconnect between a company's reported renewable energy use and its actual energy practices. This can lead to criticisms of "greenwashing," where companies claim environmental responsibility on paper without enacting meaningful changes in their operations. Moreover, the effectiveness of RECs heavily depends on the rigor of the certification programs and the regional electricity grids they support, which can vary widely in terms of actual environmental benefit (Environmental Protection Agency, 2021). While RECs can be a part of a broader environmental strategy, they should not be a standalone solution for Pfizer if it is aiming to genuinely reduce its environmental impact.

Ultimately, scaling renewable energy resources worldwide involves overcoming substantial geographical, economic, and regulatory challenges. It requires coordinated efforts between governments, businesses, and communities to create conducive environments for

renewable energy growth. Addressing these challenges is critical for achieving broader adoption of renewable energy and meeting global energy and climate goals.

Managing Emissions across Supply Chains

Pfizer's proactive engagement with suppliers to manage and reduce Scope 3 emissions demonstrates a significant effort towards sustainable practices, as highlighted in their 2023 Impact Report. Through its detailed assessments and collaborative projects aimed at enhancing supplier sustainability, Pfizer is actively working to lessen its environmental impact (Pfizer, 2023). The company's commitment to these initiatives is crucial given that Scope 3 emissions often constitute the largest portion of a company's carbon footprint, covering indirect emissions from activities such as raw material sourcing, manufacturing, and logistics associated with the supplier network. Nevertheless, challenges remain in ensuring that these efforts are consistently applied across Pfizer's extensive global supply chain.

The variability of environmental regulations across different countries introduces a notable tension and gap in the consistency and verification of supplier practices. This inconsistency can dilute the effectiveness of Pfizer's overall sustainability efforts. Moreover, the depth of Pfizer's impact is another concern. While primary suppliers are directly engaged, secondary and even tertiary suppliers may not receive the same level of scrutiny or encouragement to adopt greener practices, posing a risk to the integrity of the sustainability initiatives.

To bridge these gaps, Pfizer could consider implementing more stringent monitoring and verification processes that ensure all suppliers, regardless of their tier or location, adhere to the same high environmental standards. Additionally, expanding educational outreach and

incorporating sustainability more deeply into procurement policies could drive broader compliance and innovation in environmental practices across the entire supply chain.

Rapid Technological Advancements

The fast pace of technological change in the pharmaceutical industry presents both an opportunity and a challenge. Pfizer will need to continuously adapt and invest in new technologies to reduce emissions and improve energy efficiency. This requires not just financial investment but also a strategic focus on keeping pace with or ahead of technology trends, which can be difficult given the long timelines of pharmaceutical R&D and production cycles.

The Impact Report discusses how Pfizer is leveraging AI to enhance its healthcare services and R&D. This includes using AI to improve the discovery and development of new treatments and to optimize manufacturing processes and the delivery of therapies. As the use of AI technologies proliferates across various sectors, the environmental impact of these technologies is becoming increasingly significant. AI systems, especially those based on deep learning, require considerable computational power. For instance, training a single AI model like OpenAI's GPT-3 is estimated to emit as much carbon as five cars in their lifetimes (Strubell et al., 2019). The training process for such models often involves complex computations on thousands of GPUs (Graphics Processing Units) running continuously for days or even weeks, consuming vast amounts of electricity. The carbon footprint of these operations depends heavily on the source of the electricity. In regions where coal or gas predominates, the environmental impact is exacerbated.

Furthermore, AI systems are typically trained and deployed within data centers that consume large amounts of energy not only for powering servers but also for cooling systems to dissipate the heat generated by the computations. According to the International Energy Agency

(IEA), data centers globally account for about 1% of total electricity use (IEA, 2024). As AI becomes more widespread, the energy consumption of these facilities is expected to grow, leading to greater carbon emissions unless more renewable energy sources are utilized.

To mitigate these environmental costs, Pfizer will need to consider several strategies. Increasing the energy efficiency of AI hardware through better chip design and advancing towards more energy-efficient AI models are crucial steps. Furthermore, using more renewable energy sources for power in data centers and improving the recycling and reusability of electronic components are essential to reduce the carbon footprint of AI technologies.

Conclusion

In this paper, we have explored Pfizer's Environmental, Social, and Governance (ESG) strategy, particularly focusing on its climate-related initiatives and the challenges it faces in achieving its ambitious environmental goals. Pfizer, recognized globally for its rapid development of the COVID-19 vaccine, has not only influenced global health significantly but also adopted a robust approach to sustainability. The company's commitment to achieving net-zero carbon emissions by 2040 underscores a comprehensive strategy that includes significant reductions in direct greenhouse gas emissions, enhancements in renewable energy use, and a targeted approach to managing Scope 3 emissions across its extensive supply chain.

Despite these strides, Pfizer faces notable challenges in fully realizing its ESG objectives. The scalability of renewable energy sources remains a critical issue, with the need for more consistent and reliable energy sources across its global operations. Additionally, the management of Scope 3 emissions requires deeper integration and verification across Pfizer's multi-tiered supply network to ensure uniform adherence to environmental standards. The rapid pace of

technological change also presents both opportunities and challenges, requiring continuous adaptation and investment to stay at the forefront of sustainability practices in the pharmaceutical industry.

To move forward, Pfizer will need to enhance its strategies for verifying supplier compliance, deepen the integration of sustainability criteria in procurement, and consider the environmental costs of AI while investing in technological advancements. By addressing these areas, Pfizer can strengthen its ESG framework, ensuring that its influence on global health is matched by its commitment to environmental stewardship and social responsibility. Through these efforts, Pfizer not only contributes to a more sustainable world but also sets a standard for the industry, demonstrating how environmental challenges can be navigated with innovative and dedicated strategies.

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