BioProcess Insight

What drives the bioprocessing industry in tackling Scope 3 emissions?

Managing Scope 3 emissions in bioprocessing - Part I

Introduction

The bioprocessing companies are increasingly acknowledging their greenhouse gas (GHG) emissions. They are under pressure to enhance productivity and reduce costs, all while optimizing processes to lower resource consumption and accelerate time-to-market. These emissions are categorized into Scope 1, 2, and 3 types. Scope 1 emissions stem from on-site fossil fuel consumption, while Scope 2 emissions are associated with the purchase and transportation of energy. Scope 3 emissions refer to the indirect emissions throughout a company's value chain. These emissions are a concern for the bioprocessing industry because they are not owned or directly controlled by companies. Therefore, effective management to reduce the Scope 3 emissions requires collaboration with suppliers, customers, and other stakeholders across the entire value chain. This three-part article series will explore the significance of Scope 3 emissions, identify key contributors, and facilitate actionable strategies for reduction.

In Part I, we will introduce the foundational concepts of Scope 3 emissions and their importance. Part II will delve into the contributions in bioprocessing concerning the equipment and consumables, while Part III will focus on strategies to manage and reduce these emissions effectively.

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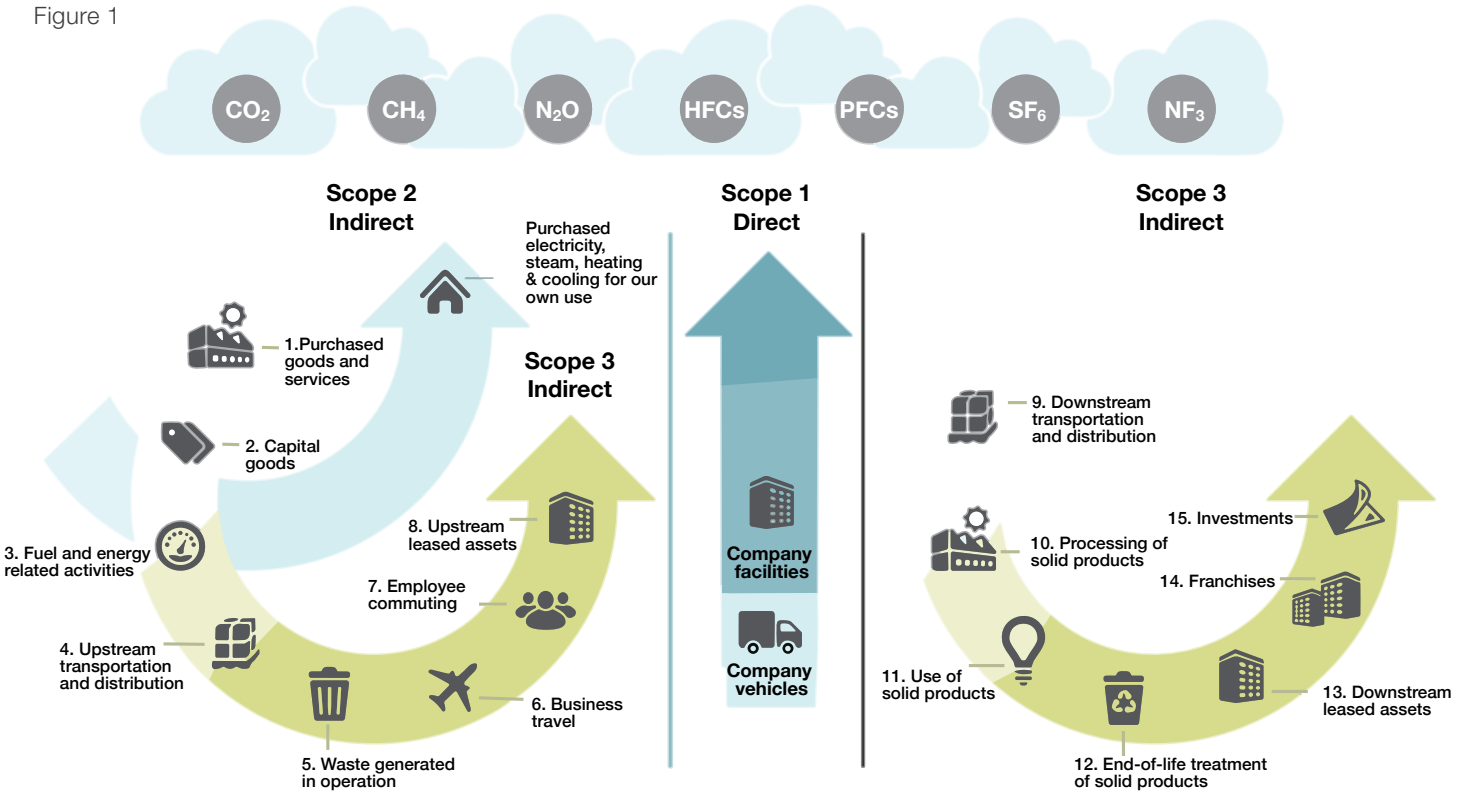
What are Scope 3 emissions in bioprocessing

Scope 3 emissions are the GHG emissions that occur throughout a business's value chain, excluding direct emissions from owned sources (Scope 1) and indirect emissions from purchased energy (Scope 2). Scope 3 emissions include all other indirect emissions from upstream and downstream activities.

These emissions are crucial because they often represent the largest portion of a company's total GHG emissions. For instance, the production, transportation, usage, and disposal of equipment and recurring consumables used in bioprocessing can significantly contribute to a company's overall carbon footprint. By understanding and assessing these emissions, companies can adopt more sustainable practices and improve their environmental impact.

Figure 1



Source: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard

Addressing Scope 3 emissions in bioprocessing

Addressing Scope 3 emissions is not merely about regulatory compliance or corporate social responsibility, but about driving operational efficiency, reducing costs, and enhancing brand reputation.

1. Operational efficiency: By identifying and managing emissions across the entire value chain, companies can uncover inefficiencies and optimize processes, leading to better resource utilization and cost savings.

2. Cost reduction: Reducing emissions often translates to lower energy consumption and waste generation, supporting the bottom line by decreasing operational expenses.

3. Brand reputation: Consumers and stakeholders are increasingly valuing sustainability. Demonstrating a commitment to reducing Scope 3 emissions can strengthen brand loyalty and attract environmentally conscious customers and investors.

4. Risk management: Addressing Scope 3 emissions helps companies anticipate and mitigate risks associated with supply chain disruptions, regulatory changes, and evolving market demands.

5. Innovation: Proactively managing emissions can drive innovation in products and processes, supporting efficiencies.

In Part I, of this article series, we have reviewed the foundational concepts of Scope 3 emissions and their significance in the bioprocessing industry. We highlighted the importance of a comprehensive approach to managing them. By focusing on Scope 3 emissions, companies contribute to global sustainability efforts and position themselves for long-term success. In Part II, we will explore how the technology used in bioprocessing, including equipment and consumables, contributes to Scope 3 emissions. Assessing these factors is essential for identifying areas for improvement and implementing effective sustainability practices.

References

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