Are there flaws in freight emission reporting, and is the information credible and comparable?

A qualitative case study on Finnish-listed industrial- and retail companies

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Abstract:
The growing demand for greater transparency from stakeholders regarding corporate actions has led companies to disclose their non-financial data by demonstrating their actions in a non-financial report. This data is used at regulatory levels to meet current and future regulations to comply with United Nations SDG goals, but also to assist investors in making environmentally conscious investments.

This paper investigates the topic of ESG reporting, with a specific focus on Scope 3 emissions of shipping that affect Finnish companies. The study assesses the current reporting standards' relevance, reliability, and comparability. The reporting standard reviewed in this paper is the Greenhouse Gas Protocol standard, used by companies reporting their ESG performance using the SASB and GRI frameworks.

The research employed a qualitative methodology, specifically utilizing a case study approach. The study has gathered empirics from ten non-financial reports and five interviews with employees working with the company's ESG information.

The analysis of the empirical data indicates that the current reporting standards present uncertainties for reporting companies in reporting their freight emissions. Current standards allow companies to report their emissions using one of three calculation models and selecting between primary and secondary data, which makes companies' freight emissions difficult to compare against other companies.

The reporting of freight emissions has highlighted the existence of certain bottlenecks. Specifically, the data collection process was not seamless, and the quality of the collected data was inconsistent. Consequently, those involved in data collection found it to be a time-consuming task and sought to improve the quality of the data. Furthermore, the collected data was of little relevance to the company's decision-making and hence had limited utility.

Ultimately, the reliability of freight emission reporting varies depending on the calculation method utilized by the reporting company and the quality of the data acquired by the shipping company, as evidenced by the GHG Protocol requirements and the interviewees' responses. Nevertheless, as reporting companies rarely disclose their chosen calculation method, external stakeholders may face difficulties in assessing the credibility of a particular company's emission report.

Keywords: Sustainability, Non-financial reporting, ESG, CSR, Relevance, Reliability, and Comparability

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1. Introduction

This chapter will introduce the reader to the current situation of non-financial reporting and how it has evolved. It will bring forward the reporting problems, the validity of companies' numbers, and how the company gathers information to present a true and fair non-financial report. This chapter will also assess the purpose of the study and its limitations.

1.1 Background

The concept of sustainability has gained increasing recognition among companies over time. The concept of "sustainability" has experienced a surge in popularity and has evolved. The current notion of what is considered sustainable may not align with its future understanding. Today, non-financial reporting is partly regulated but is generally deemed voluntary. However, many individuals opt to invest more in a sustainable lifestyle. Companies have established a series of sustainability objectives that they strive to achieve. Many of the goals set by the companies are usually tied to the United Nations recommendation to limit global warming below 2 degrees Celsius, preferably 1.5, or the European Union's proposals, such as the Fit for 55 Climate package, whose goal is to reduce the European Union's emissions by 55% before 2030 compared to 1990 (UN, 2021 & EC, 2021). Many companies have adjusted their business model according to these recommendations and proposals. Some companies only follow the statuary laws, while others have based their business model on improving their Environmental, Social, and Governance (ESG), which are displayed in their non-financial report.

Many companies conduct non-financial reports to become more transparent towards groups that have an interest in the company. The non-financial information should display how the company addresses its impact on the environment and social issues, meanwhile, how it maintains excellent governance in a readable way to its internal and external stakeholders (Buniamin & Ahmad, 2015). Moreover, many investors, employees, and regulators have pressured companies to strengthen their non-financial reporting and apply performance measures that make these disclosures more comparable. Due to many reasons, such as stakeholder pressure, companies have chosen to improve their ESG and CSR not only to avoid harmful practices but also to accelerate the process of business and social

transformation to create another layer of value for their business and obtain new ways of becoming more competitive. (EY, 2021).

Non-financial reporting is currently optional for companies. However, companies with more than 500 employees active within the European Union are mandated to publish their non-financial information (EU, 2021). Although, it has become much more prevalent for companies to conduct non-financial reports. According to a survey conducted by KPMG in 2020, there have been tremendous changes since their first survey was published. Their first survey, published in 1993, found that only 12% of the companies published a non-financial report. A more recent survey in 2020 found that over 80% of the companies worldwide and 96% of G250 companies published a sustainability report (KPMG, 2020). In the future, sustainability reporting will have a more considerable influence on companies and how they will reach out to their stakeholders. How non-financial reports are conducted will change and strive towards a universal way of reporting its ESG, stakeholders will determine these standards (Hohnen, 2012).

As mentioned above, the main aim of a non-financial report is to understand its negative contra positive impacts on the society, environment, and economy. As non-financial reporting matures within the company, it can locate problems, create new opportunities, gather an extra level of competitiveness, and increase shareholder value. A non-financial report should also build deeper trust and credibility between the shareholders and the company. (Deloitte, 2020).

Unfortunately, today many corporate leaders view sustainability efforts primarily as a way to enhance their reputation and attract socially aware investors, employees, and customers. Porter, Serafeim, and Kramer (2019) explain how social impact has evolved over the past decades and draws comparisons on how socially responsible funds started to avoid specific sectors such as tobacco, alcohol, gambling, and fossil fuels due to the social factors and the harm these industries are accountable for. However, companies heavily invested in sustainability have historically been less likely to be warranted buy recommendations, or even worse, the valuations of those companies have been discounted. Only more recently has this type of discount disappeared. (Porter, Serafeim & Kramer, 2019)

Although non-financial reporting differs from traditional financial reporting, the cornerstones behind them are similar. Both reports require valid information and display current, informative data, referred to as "relevance and reliability." From a historical perspective, relevance and reliability have had and continue to have a significant impact on accounting. Although, between relevance and reliability, one must outweigh the other. In accounting, achieving relevance without the cost of reliability or vice versa is difficult. When making a change in accounting standards, the goal should always be that the increase in reliability is more significant than the decrease in relevance or the other way around (Scott, 2015).

A significant part of the sustainability report reflects the "E". The environmental part of a company's ESG should reflect how it uses energy, handles waste, how much pollution it emits, and how it conserves natural resources and animal treatment (Deloitte, 2023). A significant part of a business environmental report is the tracking of its emissions. Compared to traditional financial reporting, it can be challenging to obtain reliable data, partly due to the need for a standard unit such as a currency. However, the data the company obtains can vary. In the worst case, the information could influence the secondary reporters reporting quality and purchasing decisions. The reporting company often must trust other emission data, which have not been calculated and reported by themselves. When understanding its impact, it often must observe the whole value chain and where emission occurs.

These emissions are often reported through an accounting standard set by the Greenhouse Gas Protocol. The GHG protocol is used worldwide today, and in 2016, 92% of Fortune 500 companies used this protocol either directly or indirectly. The emissions that the company accounts for are divided into three scopes. The first scope accounts for direct emissions, the second measures the company's indirect emissions, and the third measures the other emissions added to the value chain outside the company itself. (GHG Protocol, 2021)

The third scope is often the most difficult to obtain in an ESG report. Still, Scope 3 often represents the majority of a company's emissions. Therefore, conducting a complete Scope 3 emission report is crucial for a company to display all of its emissions. However, many companies do not report these emissions partly due to the need for more reliable data. From an investor's perspective, they could interpret this as a lack of disclosure from the

company. Suppose a company chooses to disclose these figures and information leaks from a third party that the information does not present an accurate picture. In such a case, it could hurt the company's legitimacy, creating a dilemma. In addition, there has been a great desire from investors and other NGOs for better reliability and relevance in ESG reporting. For example, a report published by PwC in 2016 found that almost 75% of investors were either neutral toward or dissatisfied with the current ESG reporting practices (Referred in D'Aquila, 2018).

Therefore, this thesis aims to examine the credibility of non-financial reporting. It will examine a part of the emission reporting under Scope 3 from the GHG Protocols standard. It will apply it to freight bought from the shipping company and thereby examine whether reporting these emissions does propose a true and fair view and is comparable with other emission reports based on the standard set used. Suppose a non-financial report does not present an informative report. In such a case, the purpose of conducting a report loses its interest, especially among investors, if the information is reliable and relevant. From previous studies, there has also been evidence that many companies with a harmful environmental impact still conduct sustainability reports to reduce their exposure to political and social costs by directly projecting a good image of their environmental awareness (Cho & Patten, 2013).

1.2 Problem discussion

Companies' ESG is published in their non-financial report. ESG, as of today, could be seen more as a buzzword than a solution in terms of reflecting a company's non-financial performance. Turning this into a report reflecting the company's actual non-financial performance is challenging to measure. The letters E (Environmental), S (Social), and G (Governance) are none like the other. All are measured differently and cannot be traced to a financial metric. Compare financial accounting where one euro of cash equals one euro in physical value, and one euro less of cash equals one euro less in value. In financial accounting, all values can be traced and measurable, whereas in sustainability accounting, explicitly accounting regarding the environment, it can become exceedingly difficult to measure and value. (Kaplan & Ramanna, 2021)

Currently, ESG is a highly debated topic, and dissatisfaction with current ESG reporting is evident. For example, a survey performed by PwC found that 75% were either neutral or dissatisfied with the current standards (Referred in D'Aquila, 2018). Today, many corporate leaders view these sustainability efforts as a way to improve their reputation (Porter, Serafeim & Kramer, 2019). Meanwhile, other companies try integrating their sustainability actions into their core business strategy. The problem occurs when companies and investors benchmark these reports against each other. At present, emission reporting standards allow the reporting company to choose between different reporting methods. Furthermore, the risk of deviations between different reporting companies' emission reports amplifies. Therefore, it creates a dilemma where reports can externally look similar, but the process behind them could be very different.

This thesis aims to highlight the problems of reporting emissions from the shipping industry. This industry stands for the majority of global logistics. Nevertheless, there are uncertainties regarding how emissions are reported, and the interpretation of the standards is broad regarding its reporting methods. Due to the broad interpretation of reporting methods, it can affect third-party companies indirectly when purchasing freight logistics. When purchasing freight services, the question is what data the shipping companies provide to the reporting company and whether the information is sufficient for calculating and later reporting its emissions. The problem of more concern is whether the published information appears to be unreliable.

When companies ship goods, they are provided with emission data from the shipping company. However, it is crucial to comprehend the quantity and quality of data the company has been provided with and how the shipping company has obtained the emission figures priorly. Within the Finnish maritime industry, emission reporting can vary depending on the type of vessel. Today, there are two ways of allocating emissions in Ro-Pax vessels between passengers and transported goods, the MASS method, and the AREA method, according to EN 16258 (CLECAT, 2012). Selecting either of these two methods, the outcome can affect the emission report. Therefore, such an example could present different emission figures only depending on what method the shipowner uses. It creates a dilemma for companies buying freight from these shipping companies because if the numbers fluctuate and are not

comparable, it can display an advantage to the shipping company, which is reporting according to the method that displays the most positive emission figures for the transporting company. These emission figures are later used in reporting the company's ESG report and could, at worst, present a misleading picture of the company. Since the standards lack requirements, it will also be more challenging for third-party companies to determine whether the freight can be considered low emission or if it is just a label for another way to report the same emissions.

1.3 Purpose

The aim of this paper is to examine and question present emission reporting standards with specific focus on freight emission reporting. The paper investigates whether present standards can present and unbiased emission report that that exhibits a high degree of reliability while presenting relevant information. The paper seeks to highlight impracticalities in the reporting value chain, and whether these impracticalities can play a role in the emission reporting. With current extensive use of non-financial reports has emphasized improving the reporting quality to create a tool to compare companies ESG against one another. A significant number of stakeholders are interested in companies' non-financial reports, for example, organizations, the government, the European Union, and paramount, the investors. Therefore, the published non-financial data must reflect the company's environmental impact and actions. Frequently, investors are restricted to investing solely in companies that prioritize reducing their environmental impact. The release of inaccurate numbers could it result in a breach of confidential information, will likely lead to a decline in the company's reputation and erode the trust that has been established.

Today, emission reporting within the shipping industry has very loose regulations on how emissions should be reported. In addition, certain vessel types in the industry force shipping companies to choose between allocation methods which can lead to different emission numbers for their customers only based on reporting methods. Therefore, to present reliable data, the reporting company must ensure that the data received from the shipping company is reliable. In addition, current reporting standards allowing companies to select

among three methods to report Scope 3 logistics emissions, thereby increases the probability of presenting numbers that are not comparable and, additionally, raises the risk of presenting numbers to their stakeholder to present a current view of the company's logistics emissions.

The research question for the thesis is listed as follows:" Are there flaws in freight emission reporting, and is the information credible and comparable". Therefore, the study seeks to examines the reporting behavior from third-party reporters. Thereby assess the practicality of current emission reporting, and the credibility of the information disclosed from the viewpoint of the stakeholders. It seeks areas within the reporting which flaws to disclose company's freight emissions correctly. Subsequently, comparing different reporting scenarios and using different reporting methods among companies can propose an incomparability between their emission reports. The research question is answered through qualitative research performed through document analysis and interviews. The document analysis analyzes the standards used to conduct an emission report and help from earlier studies on the same topic. The document analysis uses information published companies' non-financial reports to highlight what information is provided to the stakeholders, and to collect data on how companies distribute this information to its stakeholders. Additionally, the data helps to support claims made by the interviewees. The interviews help to answer specific problems of the emission reporting which is not presented in the non-financial report. They also help to enlighten what information is used to conduct Scope 3 emission reports, focusing on freight and the determinants behind the reporting.

Collecting that data will display any types of bottlenecks in the reporting process and gather information on whether the reporting is currently practical and if this could thereby possibly lead to reporting implications. The paper highlight how reliable and relevant the freight emissions reports are and their comparability both for internal decision-making and from the external perspective of an investor. Lastly, it will give opinions on how the author believes the reporting can be improved based on the answers from the interviewees.

1.4 Limitations of the study

This study will examine Finnish companies using maritime logistics in their business. In addition, the freight emissions of interest have to be reported under the company's Scope 3. If a company owns vessels itself, the reporting methodologies discussed in this paper are not applicable due to other reporting standards and regulations.

This study focuses on emission reporting and aspects tied to third-party emissions reporting. Therefore, it will not discuss other aspects of social and governance reporting. It will neither reflect on correlations between sustainability reports and financial reports but rather examine whether the emission report reflects an accurate picture of companies' intentions which can affect stakeholder decisions. The study will process and discuss emission calculation and allocation methods the third-party companies use when buying freight logistics. However, it will not discuss specific variables in the reporting methods but the foundations behind conducting them. The research method used in this thesis is qualitative. It will, therefore, only reflect the perspective of a limited number of people working within the field of environmental reporting.

2. The cornerstones of ESG-Reporting

This chapter introduces the reader the cornerstones of non-financial reporting. The chapter discusses reliability, relevance, and comparability from the perspective of ESG-reporting. It highlights two widely used theories within the field of non-financial reporting. Lastly, it provides information of currently used frameworks, and which framework this paper has focused on examining.

2.1 Relevance and Reliability

The main objective of traditional financial accounting is to display information to its users (Beaver & Demski, 1974). It should provide information on how well a company performs, its financial position, how it manages its business and its projected outlook. In order to provide this information, it has to be Understandable. For information to be considered understandable, it has to be understood by its users. The standard-setters can see understandability as a tool to ensure the accounting standards developed produces disclosures for complex areas in an understandable way (Deegan & Unerman, 2011). Conducting an understandable report needs relevance, reliability, materiality, and comparability (Deegan & Unerman, 2011).

A significant part of this thesis examines the relevance and reliability of emission reporting. Following the application of the qualitative characteristics of relevance and reliability, the data will be assessed to determine its suitability for comparing non-financial reports with one another. The terms relevance and reliability should be considered cornerstones in accounting frameworks. Central discussions around relevance and reliability are often discussed in the topic of financial reporting. However, from the viewpoint of non-financial reporting, the importance of relevance and reliability is comparable to what they are in financial reporting.

Relevance:

From an accounting perspective, the definition of relevance is that published accounting information enables users to make informed decisions (Schöndube-Pirchegger & Schöndube, 2017). Relevance is also focusing heavily on timeliness and can therefore be translated into early reporting of information (Schöndube-Pirchegger & Schöndube, 2017). Relevance has two main aspects, predictive value, and feedback, which are needed for information to be relevant (Deegan & Unerman, 2011). Those aspects determine its usability and confirm, or correct earlier expectations set in the report (Deegan & Unerman, 2011). Relevance, therefore, plays a vital role in interpreting a company's report. For example, if a published report does not provide its stakeholders with current and usable information, no investor would consider using it as a deciding factor, and the information would be considered irrelevant.

Reliability:

The definition of reliability reflects on the possibility of distorted information, which is free from error, thereby verifiable and has high credibility (Schöndube-Pirchegger & Schöndube, 2017; Askary et al., 2018). Moreover, ensuring the reliability of certain publications can be challenging, and the acquisition of more reliable data may result in a delay of publication, which could negatively impact its relevance (Schöndube-Pirchegger & Schöndube, 2017). To ensure high reliability in the reporting, the company has to have excellent internal control. One of the main reasons for weak internal controls is due to poor governance, and its cost-benefit constraints can impact several parts of the internal control, such as the development, design, and maintenance of effective internal control systems (Askary et al., 2018).

Comparability:

According to IASB, the qualitative characteristic "comparability" works as a tool to compare the financial statements of different entities and their measurement methods. A significant reason for using conceptual frameworks is to produce consistent accounting standards, which can lead to better comparability. In order to have comparable reports, there is a need for

desirable characteristics, such as consistency, and therefore it is imperative to limit the number of accounting methods used. (Deegan & Unerman, 2011)

In this thesis, the evaluation of comparability will initially be based on the data received from the shipping companies, and its consistency and comparability in relation to data provided by other shipping companies. Secondly, the interviewees will be queried on their opinion regarding the impact of reporting freight emissions using different methods on the comparability of their report, and whether they consider these reports to be comparable to those produced by other companies.

The trade-off between relevance and reliability:

Although conducting a report, there must be trade-offs between reliability and relevance as they are not necessarily mutually compatible (Schöndube-Pirchegger & Schöndube, 2017). Schöndube-Pirchegger & Schöndube (2017) characterize relevance and reliability as opposing poles and describe them as "*Reliability is tantamount to late, but less noisy reporting, in order to ensure a high level of credibility*." (P. 191).

Therefore, accounting standards must evaluate and sort what information to provide stakeholders which is relevant, helpful, and informative while maintaining high reliability. However, current accounting standards tend to prioritize relevance over reliability. The determinants behind prioritization are many, such as the investors. One framework which leans more towards the interests of the investors is the IASB framework which aims to share much decision-relevant information to the investors. (Schöndube-Pirchegger & Schöndube, 2017; See also Deegan & Unerman, 2011)

When examining traditional financial reporting, it is evident that the regulations and standards that govern it place a significant emphasis on both relevance and reliability. Suppose comparing the financial reporting standards against ESG reporting. It has been discovered that ESG reports employ varying frameworks and metrics, which in certain instances, could result in an inaccurate representation of the impact of the company's actions (De Silva & De Seliva Lokuwaduge, 2022). When conducting a report, the reporting company must strike a balance between relevant information without putting too significant

of a burden on the companies to achieve the required emissions reporting with other reporting requests (Kauffmann, Tébar less & Teichmann, 2012).

Assessing the relevance and reliability of this paper reveals that the concept holds a significant importance in performing a non-financial report. This thesis identifies the relevance of how companies report their Scope 3 emissions, more precisely report freight logistics, and whether the information can be found in companies' non-financial reports or GHG inventory reports. Even more crucial in this thesis is the reliability. This thesis identifies reliability as what information is used to conduct the emission report, whether the internal control considers they can obtain good quality data from the shipping companies to conduct their emission report, and if the published freight emission information does contain uncertainties.

Two theories must be considered when evaluating reliability and relevance: the stakeholder- and the legitimacy theory. Both theories focus on the relationship between the company's operation and its environment. They both operate in different ways, whereas; the stakeholder theory works on understanding the processes behind the managerial behavior; meanwhile, the legitimacy theory processes information behind how the company value and perceive different relationships and why they act in a certain way (De Silva & De Seliva Lokuwaduge, 2022).

2.1.1 Stakeholder Theory

The founder of The Stakeholder theory was Edward Freeman, and the theory was first mentioned in his book *"Strategic Management: A Stakeholder Approach"* (Laplume, Sonpar & Litz, 2008). The best way to describe stakeholder theory is how a great range of actors with generally different interests all hold a legitimate interest in a company's activities and outcomes; it is how various groups of interest, such as employees, customers, suppliers, and financiers cooperatively work to create value (Phillips et al., 2019).

The stakeholder theory has both its strengths and weaknesses. When evaluating the stakeholder theory, it is crucial to understand each stakeholder's influence. Andrew Friedman

and Samantha Miles (2002) say in their paper: *"We argue that the weakness of stakeholder theory lies in the underspecification of the organization/stakeholder relation itself"* (p.15). They conclude four aspects of the stakeholder theory and present a more in-depth understanding of stakeholder influence. In their paper, they present in a cross table that there are four different types of stakeholders which are sorted by whether they are "compatible" or "incompatible" with each other and if they are seen as "necessary" or "contingent". Each type of stakeholder has a logic and strategic action connected to their behavior and how they are expected to influence the company. They argue that some stakeholders naturally have more influence than others due to their unique relationship in a way that they are both necessary and compatible, for example, a shareholder, compared to a stakeholder, which Is incompatible and contingent, for example, an NGO. Depending on the type of stakeholder, they are sorted based on their legitimacy. Only stakeholders regarded as legitimate are those with necessary relations with the company or organization. Moreover, incontinent stakeholders, for example, the general public and NGOs, want to believe they are regarded as legitimate. However, the authors believe the company either ignores them or pays lip service to these stakeholders (Friedman & Miles, 2002).

However, Phillips et al. (2019) argue that the boundaries shall define the challenges to the stakeholder theory rather than trying to define the challenges to it. They claim that stakeholder theory gathers information that is used to evaluate the boundaries of the firm and how it can be seen from both the inside and outside of the company. By examining different stakeholder theory reports and scholars, the trend has been misunderstood by many and does not address the theory's most important aspect. Many scholars have looked passed the *raison d'etre* of understanding the behavior made at a managerial level from the perspective of an outside company's direct control and how it can affect the company through these behaviors. Scholars have often given out assumptions regarding the boundaries between the different actors and segmented actors, turning them into different stakeholder groups like internal contra external stakeholders. Defining that their meaning to the company has little to no justification based on their arguments. (Phillips et al., 2019)

stakeholder theory is relevant to this thesis by examining the engagement in compiling a freight emission report and identifying the key stakeholders who exert pressure

on the reporting process. Andrew Friedman and Samantha Miles' (2002) work emphasizes that among the most influential stakeholders are the shareholders. In addition, they state that the stakeholder interest might change over time due to the increasing interest in companies' environmental impact. It also opines that NGOs and other stakeholder might have increasing influence in the future (Friedman & Miles, 2002). Drawing comparisons to the financial reporting, which has improved over decades. In the early stages of stakeholder accounting and financial accounting, there were many questions regarding the accuracy, consistency, comparability, and reliability before standard metrics became used (Barney, Freeman & Harrison, 2019). These problems reflect current non-financial reporting very well. For instance, reflecting on how the outside stakeholders previously advocated for increased comparability in financial reporting (Phillips et al., 2019).

2.1.2 Legitimacy Theory

Legitimacy theory can be defined as the generalized assumptions of an action made by an organization (or institute or company) that are desirable and suitable. The actions should be consistent with the norms, expectations, values, and beliefs set the society. Since a company operates from society, it should therefore be directly accountable for its actions and how it operates. The company depends on society because it allows corporations to hire employees and use natural resources. (De Silva & De Seliva Lokuwaduge, 2020)

Looking more broadly at legitimacy theory, it becomes more visible that the legitimacy theory can be divided into two different streams regarding the theory. The first theory is the macro theory which explains the concept of institutional legitimacy and portrays how the company navigates its organizational structure to gain the trust and approval of society. Meanwhile, the second stream aims to understand the underlying legitimacy of the organization. This stream emphasizes how a company actively seeks approval from groups or avoids sanctions. This stream also serves as the source where many accounting researchers draw conclusions regarding companies' legitimacy. (Matthew, 2004)

As a reporting theory, legitimacy theory aims to clarify and argue why specific measures are made to improve the reputation and legitimacy of their reporting (De Silva & De Seliva Lokuwaduge, 2022). Using legitimacy theory, a company can change its corporate strategy to come more along with the social norms, or it can do it as a symbolic gesture to positively influence its stakeholders (De Silva & De Seliva Lokuwaduge, 2020). Legitimacy theory should therefore be utilized as a tool to comprehend the rationale behind a company's voluntary reporting of its environmental disclosures (Matthew, 2004). Legitimacy can also be considered similar in nature to an asset for the company—for instance, money, which a company needs to operate and acquire through its operations. Similarly, a company can earn or lose legitimacy from its operations. If a company has low legitimacy, it will affect its operations (Matthew, 2004).

2.2 Foundation of a sustainability report

When performing a non-financial report, various standards are available for consideration and selection. This creates a dilemma on how to compare companies against each other. The IFRS announced in November that they would establish a new framework called the International Sustainability Standard Board (ISSB) which will strive towards creating a global standardized reporting system for ESG alongside existing frameworks (IFRS, 2021). Today many companies attempt to conduct a report with reliable information, but due to the variety of frameworks to choose between, the results from the reporting can differ. Additionally, the inconsistency in the quality of reporting GHG emissions can arise as a result of the lack of legal obligation for companies to publish such reports, resulting in disparities in the quality of reports from various companies. One example of quality can be defined as how completeness of a GHG discourse. A GHG report that does not provide complete disclosures serves no value when benchmarking nor displays an accurate view of a company's GHG emission report (Liesen, Hoepner, Patten & Figge, 2015).

2.2.1 Corporate Social Responsibility

Corporate Social Responsibility (CSR) can be defined as an umbrella term that aims to describe a company's integrated social, ethical, and environmental responsibilities, which can be linked to its core business operations. The stakeholders are the main drivers of a company's CSR, and therefore, the company should communicate closely with them on how they will improve their core strategies and concerns. (Wickert & Risi, 2019)

Currently, there is no consensus on all responsibilities connected to CSR and how to address these problems. However, the goal is to create a better general view of the problems within the company and its solutions for them. CSR has had a tremendous effect on how companies operate. Many companies nowadays have changed their mindset from "How they spend money" to "Give back to society". Now companies focus instead on how the money is made. It is done by looking over their business operation and how they integrate CSR into their business strategy. (Wickert & Risi, 2019)

Conducting a CSR report is usually done voluntarily. However, within the European Union, companies have been required since 2016 to publish a non-financial statement if the company has more than 500 employees or is the following:

- Listed companies
- Insurance companies
- Banks
- Companies designated by national authorities and hold public interest entities

(European Commission, 2022)

Even though the absence of clear guidelines for the content of CSR, the Triple Bottom Line framework has established a foundation for it. The information that the company must disclose are:

- Environmental impact
- Social matters and the treatment of employees
- How the company works along with human rights

- Anti-corruption
- Diversity in the company board

(European Commission, 2022)

The goals of CSR should be to evaluate the business itself and its impact, and many companies take this very seriously. Even though many companies take this seriously, it can also enable other companies to misinform society and its investor of the impact the company has due to the lack of precise regulations. At worst, this type of symbolic gesture can be referred to as "greenwashing". The definition of greenwashing is when an organization or company has poor environmental performance while still communicating positively about it. In other words, it distributes disinformation about their environmental performance to create a misleading picture to appear in public as environmentally responsible (Wickert & Risi, 2019).

The problem starts to evolve here. Since CSR reporting began, enormous amounts of research have been invested in the topic. Over time, new suggestions have emerged for enhancing the tracking and monitoring of CSR and related subjects. New fields within the subject. Still, the information gathered from these reports can be inconsistent. People will always question the report's validity, providing that the guidelines for conducting a CSR report do not become more precise. Authors have asked for more consistency between organizational words against their actions (Bromley & Powell, 2012).

2.2.2 Triple Bottom Line

The Triple Bottom Line is an accounting framework whose purpose is to integrate the performance of three different dimensions under the current ESG. The Triple Bottom Line can sometimes be referred to as the 3Ps, which stands for People, Planet, and Profit. John Elkington introduced this framework in 1994. The purpose behind the framework was to change the heavy focus on the company's financials towards a broader perspective of accounting and to bring forward the most valuable information from the company in an understandable way to its stakeholders. In practice, the goal would be to switch from solely

financial performance toward a broader understanding of the organization's impact on its surroundings and environment. (Księżak & Fischbach, 2018)

In the Triple Bottom Line, profit reflects not only on how the money has been made but also on how the company or organization chooses to spend it. It shall reflect on how it affects its stakeholders in ways such as how they pay taxes and how it affects the community around the business. The second part focuses on the people. It shall reflect the company's social aspects. It shall reflect on how they claim responsibility towards its customer, its employees, and towards both the close and the larger community in its entirety. Lastly and most relevant in this paper is the planet. This aspect emphasizes how the company focuses on reducing its emissions, waste, and utilizing natural resources, along with how it tries to streamline water and energy use. This aspect of the Triple Bottom Line has emphasized measuring the emissions and improving resource management, thereafter, setting up a plan for improving them. Improving its resource management can even create a win-win scenario where the company also manages to save money, for example, by using lesser natural resources. In addition, improving their environmental impact can improve the company's reputation and thereby become more attractive to investors. (Księżak & Fischbach, 2018)

The problem with the Triple Bottom Line is not by defining it but by how it should be measured. In traditional reporting, profits are measured monetary, but how should ecological health be measured? Some have spoken for monetizing the Triple Bottom Line dimensions since that would simplify how we measure it and therefore make it more comparable. Still, converting nature to a standard unit such as currency is difficult due to determining the price of the nature. Another suggestion to solve the problem would be with an index. An index would eliminate the usage of a standard unit and make it possible to benchmark the digits against their peers through universally accepted accounting methods. (Slaper & Hall, 2011)

Today, the Triple Bottom Line has neither a standard method for how it should be calculated nor any accepted standards for measuring it. This has both advantages and disadvantages. The disadvantages are the challenge of benchmarking a company's Triple Bottom Line against their peer. The advantage, conversely, is that the reporting becomes more versatile and adaptable and can therefore focus on the entities in need. It can either

focus on a more comprehensive approach to the whole Triple Bottom Line or only examine a more specific aspect. Many companies today use the Triple Bottom Line and have shown that understanding the core of sustainability has also improved long-term profitability from parts such as reducing waste from packaging. (Cho & Patten, 2013)

In this case, similar to the problems with CSR is the lack of proper ways to measure the Triple Bottom Line impact of the company in question. The major difference between CSR and Triple Bottom Line is that Triple Bottom Line emphasizes more on the numbers the companies put out compared to CSR, which focuses more on how the information is communicated to its stakeholders. Therefore, the Triple Bottom Line sets the foundation of an ESG report. However, the major question mark remains for both CSR and Triple Bottom Line. None of the topics provides precise standards for tackling the problems occurring from each concept. Therefore, from an investor perspective, evaluating companies' Triple Bottom Line is difficult due companies could account for the same type of emissions in different ways.

2.2.3. Environmental, Social and Governance

ESG measures and describes environmental, social, and governance issues that can influence corporate behavior in investment decision-making (Armstrong, 2020). The ESG metrics' primary objective is to capture and report the performance of the company's ESG issues accurately (Kotsantonis & Serafeim, 2019). Collecting these metrics will display a company's ESG ratings. The field of finance uses ESG data and ratings in investment decisions and continues to grow (Kotsantonis & Serafeim, 2019).

Currently, ESG ratings can have a tremendous impact on decisions making for environmentally aware people. The use of ESG is also applicable outside the field of finance. The use of ESG can also decide where people work, for regulators to monitor companies and decide on new sanctions, and for NGOs:s developing a design to drive social progress (Kotsantonis & Serafeim, 2019).

2.3 Frameworks for emission reports

2.3.1 Global Reporting Initiative

Global Reporting Initiative (GRI) is an independent international organization that aims to help companies and businesses to take responsibility for their environmental impact by setting up reporting standards. These standards are voluntary and aim to reflect a company's ESG. GRI was established in 1997 in Boston and has been developed over time. GRI is the oldest active organization working with sustainability standards. In the year 2000, the first version of their guidelines (G1) was published, providing the world's first framework for sustainability reporting. In 2002 GRI published an updated version of these guidelines (G2). As the demand grew, GRI G3 was later published in 2006 and G4 in 2013. These updated versions improved and expanded the current framework. In 2016 GRI transitioned from providing guidelines to creating a global standard for sustainability reporting. (GRI, 2021)

Today, GRI is used as a tool to improve the quality of a company's sustainability report. The purpose of using GRI is to present the vision of the human- and the ecological impact a company has. One of GRI's primary functions is to distribute information to their shareholders and reach out on how they make well-informed investments within the company. The goal of GRI is not to be a substitute for their other reports, for example, their financial report, but instead create a report that complements them. (Marimon et al, 2012)

Throughout its active years, GRI has clearly stated that the logic behind the non-financial reporting should emphasize the engagement with its stakeholders and maintain eminent transparency with them. Financial reporting principles have strongly influenced GRI standards and how its baseline is set up. The entities in the non-financial report should therefore emphasize operations that generate significant impact and can be connected to their sustainability (Girella, 2018). The European Union's Directive 2014/95/EU has made it mandatory for companies with over 500 employees to report their non-financial information and has recommended the use of the GRI framework for this purpose (EU, 2022).

GRI has high standards regarding reporting quality and aims to make company outcomes comparable to others. Benchmarking company numbers helps the company strive to improve its ESG impact. In addition, earlier findings indicate that GRI reporting could regain market credibility and attract new investors by constructing a new identity with an improved image (Alonso-Almeida, LLach & Marimon, 2013).

2.3.2 The Value Reporting Foundation

The Value Reporting Foundation (VRF) is a non-profit organization created through a merger between the International Integrated Reporting Council (IIRC) and Sustainability Accounting Standards Board (SASB) which occurred in 2021. IIRC has conducted a sustainability framework earlier, whereas SASB has made sustainability reporting standards. The merger aims to create more clarity and simple corporate reporting; now merged, it will provide a better and more precise picture of how it creates value. (VRF, 2022)

In the past, SASB has focused more on US companies and industries and has had its classification system where it has classified companies by their sustainability characteristics (D'Aquila, 2018). SASB also leans more towards investor decision-making and reporting material sustainability than GRI, which has focused on a broader audience and sustainability agenda (D'Aquila, 2018). In the eyes of third-party companies which buy emissions, this standard could have a significant impact, especially if the report emphasizes investor-related data. It could potentially mandate companies to publish more detailed information about the emissions occurring under Scope 3.

2.3.3 Greenhouse Gas Protocol

The Greenhouse Gas Protocol (GHG Protocol) is a standardized accounting framework that measures public and private sectors' GHG emissions. The emission reporting extends throughout the whole value chain. In the late 1990s, World Resources Institute (WRI) and World Business Council for Sustainable development (WBCSD) recalled the need for an

international reporting standard on how companies should report their GHG emissions. In 1997, WRI and WBCSD entered an NGO-Business partnership whose primary focus would be how companies should account and report their emissions. Later in 1998, WRI, together with numerous corporate partners, published a report named "Safe climate, sound business". The report highlighted the need for a standard on how companies should measure their emissions. In 2001, the first emissions accounting standards were set and have undergone continuous updates ever since. The updated versions have considered regulatory efforts such as The Paris Agreement. (GHG Protocol, 2021)

The GHG protocol is widely used today. In 2016, 92% of all fortune 500 companies used the GHG protocol to some extent. The GHG Protocol today has set up reporting standards which are divided into three scopes, accounting for all the company's emissions. The GHG Protocol considers itself "*The foundation for sustainable climate strategies*". In addition, they have established a calculation tool that estimates companies' emissions based on several variables. (GHG Protocol, 2021)

Greenhouse gas protocol – the scopes

When measuring greenhouse gases connected to a company, the emissions get divided into three scopes. These scopes gather emissions data from the whole value chain and sort them into subcategories. Therefore, collecting data from all Scopes and subcategories should reflect a company's total environmental impact. The first two scopes target the company's direct and indirect emissions from its operations. They are considered the minimum requirements when reporting emissions. In addition, companies can report their Scope 3 emissions. Scope 3 emissions gather data linked to a product's life cycle, emissions that occur before and after a company's operations, and external emissions that are tied to the product's lifecycle. Scope 3 is difficult to measure; therefore, companies sometimes do not report this scope when conducting their sustainability report. (GHG Protocol, 2021)

Table 1 These "Scopes" have been introduced by the GHG protocol and aim to delineate direct and indirect emissions the company lets out. This table clarifies in short words what each scope's field is.

Scope 1: The direct emissions directly connected to a source that is in control of the company. An example of this could be emissions from a combustion engine owned and used by the company.
Scope 2: The indirect emissions from purchased electricity are linked to a company's field of work and consumed by the company. This scope collects information from electricity purchased and used by the reporting company.
Scope 3: This scope is optional in emission reporting and aims to capture a company's other indirect emissions throughout the value chain. The emissions captured under this scope occur from sources the company which the company does not directly control. Examples can be the extraction of raw material, transportation of a product, and usage of the sold product.

GHG-protocol revisited – Summarized by the writer

Greenhouse Gas Protocol Category 4: Upstream Transportation and Distribution

Category 4 is one of the 15 categories, which all combined reflect the company's total emissions occurring from their Scope 3 value chain. Category 4 objective is to include all emissions coming from the transportation and distribution of products that have occurred under the reporting year. This category includes transportation from third-party distributors. The category has set up standards that aim to collect emission data from different activities, and such include transportation and distribution purchased by the reporting company, inbound and outbound logistics, and transportation and distribution between the company's facilities. This category gathers emission data from the following transportations methods:

- Air
- Rail

- Road
- Marine
- Storing the purchased products

To understand how emissions are collected, the reporter must classify whether the emissions fall under scope 1 or 3 for the company. Therefore, it is crucial to gather the data throughout the value chain. More importantly, this paper shows how the scope 1 and 3 emissions account for the emissions from the marine segment. (GHG Protocol, 2022).

When calculating the Scope 3 emissions used for transportation, the most common methods are fuel-based, distance-based, and spend-based method. The fuel-based method is usually the best applied except for truckload shipping. The most significant limitation on vessels is space, so the GHG protocol proposes using volume-based allocation. If it is truckload shipping, the emissions should be reported by the goods sent. (GHG Protocol, 2022).

Greenhouse Gas Protocol Category 9:Downstream Transportation and Distribution

This category aims to gather emission data from transportation from vehicles and facilities that the reporting company does not own. The calculations are similar to chapter 4, but a company should report emissions under Category 9 if the company buying a product does not pay for the transportation. (GHG Protocol, 2022)

2.4 How emissions are allocated per reporting standard

Reporting emissions from the maritime sector varies depending on whether it is the shipping company reporting their emissions or the reporting company reporting their emissions coming from the cargo emissions. Shipping companies with large vessels within the European Union have been obliged since 2018 to report their emissions under a monitoring reporting and verification standard (going forward MRV standard). These emissions are later

stored in a database and work as a part of the European regulations, which force shipping companies to reduce their emissions to meet the requirements of a carbon-neutral union by 2050. To report and allocate emissions and later provide their customers with details regarding these emission impacts, usage of EN 16258 Standard provides allocation recommendations (CLECAT, 2012).

Third-party customers, on the other hand, usually use the GRI standard, IASB standard, or both to conduct their non-financial reports. Both these standards recommend using the GHG protocol standards to report and calculate their emissions. The GHG protocol sets the foundation for this thesis regarding third-party emissions reporting due to its wide use among companies and its accomplishments by evolving its reporting. Therefore, the thesis examines the different opportunities to understand firstly, how emissions are allocated and secondly, later reported. Furthermore, understand the differences between the methods and their implications.

The application of the GHG Protocol when reporting freight emissions

The GHG protocol has two categories to guide how freight emissions should be allocated and reported. The first category is Category 4, which focuses on upstream transportation and distribution, and the second is Category 9, downstream transportation, and distribution.

Category 4 aims to gather freight emission data from the whole value chain. Therefore, the reported freight data falls under either Scope 1 or 3, depending on which company is responsible for the freight. Since the shipping company primarily causes these emissions, they will report it under their Scope 1 emission (GHG Protocol, 2023). Companies that buy freight from shipping companies report these emissions under Scope 3. However, the shipping does not necessarily provide how their data has been calculated, allocated, and reported. Therefore, it can be challenging for a company buying freight to obtain sufficient data from the shipping since the shipping and reporting company does not report according to identical principles and standards.

Following table 4.1 *(See appendices Figure 1)* from the GHG protocol released in Chapter 4 - Scope 3 category description, the GHG Protocol clearly states that the Scope

reporting directly depends on which part is directly in control of the emission (GHG-protocol, 2023). Reporting emissions that occur from logistics transportation are identified as either in-house or outsourced logistics. The in-house logistics thereby go under Scope 1, and outsourced logistics go under Scope 3. Since most companies do not own their own vessels and outsource the logistics, freight emissions will become companies' Scope 3 emissions. The GHG protocol has freight emissions listed as maritime transport.

When calculating and reporting emissions from Scope 3 transportation, three methods are listed as fit for use. The methods listed are fuel-based, distance-based, and spend-based methods. The selection of the method depends on what available data the company has. Each method requires different amounts of information and activity data. Moreover, following the decision tree set up by the GHG protocol from Scope 3 Category 4, it instructs which method should be chosen depending on the significance of the logistics for the company and what data variables the company has obtained. (GHG-protocol, 2023)

In order to comprehensively comprehend the disparities between various calculation methods, companies must be aware of the quantity of primary and secondary data that is required for reporting each method. Primary data is sourced directly from suppliers or specific segments of the value chain that are unique to the particular process. In contrast, secondary data refers to industry-average data, such as data available in published databases.

Emission calculation methods

In selecting the appropriate calculation methods to report freight emissions, the GHG Protocol lists three methods. The fuel-based, distance-based, and spend-based methods. As mentioned earlier, each method has different requirements. The methods can be succinctly summarized as follows:

- The fuel-based method: Emphasizes on amount of fuel consumed, for example, determining the freight company's Scope 1 and 2 and applying a suitable emission factor for the fuel.

- The distance-based method: Emphasizes determining the distance, the mass of the cargo, and the type of shipping mode, then applying a suitable emission factor for the mass-distance.

- Spend-based method: Collecting data on how much money has been spent on freight and thereafter applying an emission factor from an Environmentally-extended input-output (EEIO) database.

(GHG-protocol, 2023)

Among the calculation methods, the fuel-based method requires the most data; meanwhile, the spend-based method requires the least amount. For example, suppose a company considers logistics to impact its emission significantly and has excellent freight data, including various variables about its transport. In that case, it should select the fuel-based method. Moreover, if a company does not have much detailed info about its freight logistics, it could use the spend-based method. (GHG-protocol, 2023)

The best way to apply the fuel-based method is if the whole ship is exclusively shipping for a single company. Unfortunately, it often ships goods for several companies at a time, so emission allocation is crucial. When allocating emissions for a vessel, the allocation emphasizes the most significant limitation. The GHG protocol argues that the vessel's volume is the most significant limitation when transporting goods by sea. Therefore, the allocation should be volume-based. (GHG-protocol, 2023)

Suppose a company finds that the information they need to obtain is unavailable or the data is lacking reliability. In that case, the GHG protocol recommends that the company use the distance-based method. Suppose the reporting company chooses to use the distance-based method. In that case, they are comparing it to the fuel-based method incorporating data based on averages like "average" size, utilization, mass, and more. This method has the carrier as the primary data source and expects the data delivered to be great. (GHG-protocol, 2023)

The last option of reporting is through the spend-based method. The spend-based method holds many uncertainties, and the GHG protocol recommends that it be used for

screening purposes. The spend-based method should only be applied if the fuel-based and distance-based methods cannot be used. This method is based on the amount spent on transportation multiplied by relevant EEIO factors. (GHG-protocol, 2023)

By understanding the standards of the GHG Protocol, when conducting a Scope 3 report, a significant deal of emphasis has been put that the carrier being able to provide the data needed. Often, it requires detailed data that the shipping company may not even obtain. Suppose the reporting company manages to obtain asked data. In that case, the calculation of it can vary in different ways depending on what shipping company the reporting company use and the standard the shipping company follows. Another problem later follows up this problem in the emission allocations in GHG protocol, which is a concern, especially within the Baltic Sea.

2.5 Skepticism against ESG-reporting

Currently, it is widely acknowledged that ESG reporting offers several benefits to companies. However, compared to traditional financial accounting, ESG reporting has not been developed for as long and tends to be questioned for its validity. Today's financial reporting is very well understood. Its relevance and reliability in financial accounting could be as quickly defined as one dollar more in cash equals one dollar more in value and vice versa. In financial accounting, everything can be traced back and has a standard unit, the dollar (or other types of currency) (Porter, Serafeim & Kramer, 2019). While financial reporting has a great foundation of reporting standards to disclose its financial information, non-financial information is often presented in many various ways (De Silva & De Silva Lokuwaduge, 2022). Because of this, the information can become very inconsistent. Thereby, the reliability of the information given can be questioned by the investors and other stakeholders since it can enable the conductor of the report to mispresent information and, in the worst case, be labeled as greenwashing (De Silva & De Silva Lokuwaduge, 2022). The overall goal of conducting an ESG report is to build trust, improve processes within the company and create competitive advantages. Instead, some companies choose to use the ESG report more as a

managerial tool to improve the company image, thereby creating a reverse effect (De Silva & De Silva Lokuwaduge, 2022).

Today, stakeholders want ESG reports to provide a comprehensive report highlighting a company's impact and future vision in a readable way. However, a report conducted by PwC in 2016 states that the lack of information given in ESG reports is underwhelming. In contrast, three-quarters of investors were either dissatisfied or neutral with current ESG reporting (Referred in D'Aquila, 2018). The evidence from PwC:s report was similar to the fillings from SEC in 2016. The SEC found that the disclosed ESG reports during that same year were inconsistent and that 80% of all reports submitted lacked sustainability-related disclosures (Referred in D'Aquila, 2018). Zhu, Erikstad, and Nowark support the claims that there is a lack of allocation standards. The article by Zhu, Erikstad, and Nowark was published in 2014 and has brought forward the problems of allocating emissions within the shipping industry. Within the maritime transport segment, more specifically the Ro-Ro and Ro-Pax industry, the problem of allocating emissions has been acknowledged. Among different allocation schemes, there have been three methods of allocating the freight, weight, volume, and economic volume. All methods have advantages and limitations (Zhu, Erikstad & Nowark, 2014).

3. The problem of reporting emissions

3.1 The current conception of ESG reporting from a skeptical eye

Sustainability reports are a great way to communicate with stakeholders. The thought behind sustainability reports is very similar to traditional financial reporting. However, now the aim is to reflect the company's corporate social responsibility instead of its market and financial position. Sustainability reporting lacks the same record of accomplishment as financial reporting and therefore has seen a tremendous amount of critique for its lack of reliability and usage of evaluating a company.

Daniel B. Thornton wrote an article in 1993 that reflected on early sustainability reporting and brought forward the common consensus that accountants are always the persons to blame for environmental degradation. Thornton argues that, similarly to economics, accounting has problems understanding externalities, and it is hard to understand the information behind the numbers from the accounting perspective. Thornton claims

"If we rely on Adam Smith's invisible hand to do everything, what incentives would people have to protect the environment? Since accounting recognizes completed transactions, it's tarred with the same brush. Accounting is the invisible hand's accomplice in a crime; accounting ignores "Externalities" like environmental degradation, information about which is not included in the prices. Business, therefore, is not sufficiently accountable for externalities under GAAP."

(Thornton, Daniel B, 1993. P.36)

He claims no firm has ever earned a sustainable profit, and current accounting standards cannot account for environmental degradation. Instead of changing the accounting standards, Thornton made a controversial claim that those with power and economic decisions should instead set the boundaries of a company's emissions. His conclusions proposed a system similar to what we today call a "cap and trade scheme". (Thornton, 1993)

The current problem is that sustainability reports tend to exclude the bad news and highlight what it does well (Porter, Serafeim & Kramer, 2019). There have been many changes in the reporting since 1993. Instead of keeping it only to the financial reporting, the company provides the stakeholders with a non-financial report. The challenge lies not in identifying the company's existing issues, but in evaluating how these issues are disclosed and how they address its CSR issues, as well as assessing the methodology used in compiling and presenting ESG data. If a company discloses these numbers, it is either of two options. The first option is that the company genuinely has excellent ambitions to reduce its harm to society and the environment, or the second is to enhance their reputations outwards (Porter, Serafeim & Kramer, 2019).

The sustainability reporting guidelines have become more detailed over time, and now more than ever, companies are getting accountable for social impact. Still, the reporting requirements are loose compared to traditional financial reporting. Currently, there are ways to circumvent ESG problems without combating the main issue. For example, within the emissions report, companies can tend only to outsource their logistics; thereby, they do not emit emissions themselves and consequently will not be reported under the reporting company's emission scope, but rather the logistic company's. A practical example would be to compare Walmart and Amazon's emission reporting. On paper, Amazon has used less fuel than Walmart. However, looking closer, all logistics are performed by Walmart, while Amazon is outsourcing its logistics. Amazon still reports for these emissions, which can be connected to its value chain, but through its Scope 3. It creates a dilemma, - as to which of these companies is striving more toward becoming sustainable? When considering the actual situation, it becomes apparent that Walmart possesses a higher level of control over its carbon footprint in comparison to Amazon. Unlike Walmart, Amazon has, instead of taking charge of its carbon footprint, decided to outsource its logistics, thereby overlooking the issue and refraining from making any efforts to its logistics. (Porter, Serafiem & Kramer, 2019)

It has become common for companies to display their CSR and ESG due to increasing interest among companies' stakeholders. Regarding the disclosure of the companies' emissions, it has been found that stakeholders influence how a company reports its numbers. However, the data published is not always complete, which could be why this reporting is

voluntary and could be seen more as a symbolic gesture to limit their exposure (Liesen, Hoepner, Patten & Figge, 2015).

Furthermore, there is evidence found of inconsistent data in ESG reporting, and stakeholders are collecting data to benchmark companies to find a "best-in-class scenario" based on these published reports (Boirall & Henri, 2017). Benchmarks are rarely able to tell the whole picture due to the prevalence of inconsistent and incomplete data, resulting in inaccurate comparisons even among companies in the same sector. This problem occurs due to data imputation, and trying to quantify qualitative data will turn out to be very misleading (Kotsantonis & Serafeim, 2019; Boirall & Henri, 2017).

3.2 Reliability behind the reporting

From a critical viewpoint, one of the major challenges associated with sustainability reporting is its reliability. Solely relying on sustainability through reporting practices and policies tends to be too superficial to address sustainability issues in a reliable way (Boirall & Henri, 2017). The reliability of GHG emission reporting is not an exception. In 2012, Dragomir (2012) argued that at that time, sustainability reports were not providing the same level of reliability and precision as traditional financial reporting. Although time has passed since the publication of the article, the arguments from Dragomir's article remain relevant today. Moreover, sustainability reports offer stakeholders valuable information on the company's sustainability performance (Dragomir, 2012). However, the data and information reported must be accurate and reflect the company's efforts and outcomes.

The reliability aspect in reporting has focused on improving itself over time and creating deeper trust among its stakeholders. Despite the advent of increasingly sophisticated methods for assessing a company's ESG performance, the importance of ensuring reliability has become increasingly pronounced (Lokawaduge & De silva, 2022). The quality of the ESG data is crucial for the reporting, and the relevance of the information given needs to maintain satisfactory levels of accuracy (Amel-Zadeh. & Serafeim, 2017). The lack of reliability in non-financial data has been demonstrated through evidence, with many large

companies lacking potent internal controls to ensure the reliability of their disclosures (Jonsdottir et al., 2022).

Still, ensuring that the reporting is reliable can be complex. This problem is reflected in the reporting company's tendency to avoid disclosing the adverse consequences of its actions to its stakeholders. For instance, GRI has stated that its prime goal is to show precisely how the reporting company aims to contribute towards sustainable development (GRI, 2020. s7). Meanwhile, from an investor's perspective, ESG data are seen as unreliable and can be seen as a critical barrier to getting full use of non-financial data and can even extend to implying it can be used for greenwashing (Jonsdottir et al., 2022).

3.3 The ever-questioning "greenwashing" phenomena

The current state of sustainability reporting does not usually mandate companies to conduct reports in a precise way. Companies have therefore adopted many different types of reporting bodies to display their non-financial statements, such as sustainability reports, annual reports, and integrated reports to disclose their non-financial information. This inconsistency in reporting opens opportunities for companies to present misleading disclosures. The term greenwashing comes from misrepresenting the company's "green" credentials. These credentials often present a more favorable impression of the company or its products. Still, it can be challenging for the stakeholders to understand which company wants to provide them with detailed and accurate non-financial information in good faith. However, since there are no precise ways to report, it is difficult to precisely argue who reports correctly and incorrectly in good contra bad faith. There have been growing calls from regulators, market participants, and many other stakeholders for better, more transparent ways for companies to disclose their non-financial information. (Lokawaduge & De Silva, 2022)

Although it is optional for most companies to publish their non-financial statements, there has been a growing pressure to produce these reports (Liesen, Hoepner, Patten & Figge, 2015). Moreover, comparing sustainability reports can be challenging. Non-financial reports have the ability to be conducted in various ways, and the reporting bodies may vary.

Therefore, it provides the compiler of the report an opportunity and freedom to adjust the report to create a more positive picture of a company's intentions and thereby look more appealing to the stakeholders (Lokawaduge & De silva, 2022). Ethics strongly speak against doing so. However, companies have ignored ethics before, so the skepticism towards greenwashing remains strong among stakeholders until there have been improvements.

However, there are many questions regarding how reliable non-financial reports are. Investors tend to question the reliability of the ESG data (Amel-Zadeh & Serafeim, 2017). The fact that they do not provide the same regulations as traditional financial reporting is evident. Although, this type of reporting is significantly newer and has not been developed for as long as traditional financial reporting. Moreover, there have been proposals for different improvements. Such improvements require changes in the regulations; for example, the IFRS Foundation trustees have stated they believe that the companies need to provide more comparable, reliable, and consistent data and aim to reduce the complexity of these reports (IFRS Foundation, 2020. p7).

3.4 The reach for help - stricter regulations?

Like with many things, regulations come does have their pros and cons. By starting to discuss the cons of more precise regulations, it is essential to understand one of the cornerstones in sustainability reporting. In this part, it is voluntary to disclose non-financial statements.

Since many companies tackle these problems differently and focus on improving specific parts of their operations more than others, they can naturally want to provide more detailed information on the operations they want to improve. Therefore, stricter regulation could force companies to conduct reports in a specific way, which does not necessarily highlight their problems and accomplishments compared to a less regulated report. It could also force them to reallocate unnecessary resources to parts that the stakeholders hold less interest in.

Again, fewer regulations can provide extra creativity to improve how they reach out to their stakeholders. However, additional regulations and stricter rules also provide

advantages to reporting. Less regulated reports are increasingly more challenging to compare reports against one other objectively. According to the IFRS Foundation, non-financial statements need to be less complex (IFRS Foundation, 2020. p7). These statements do need more reliable, detailed information.

The argument has circulated that the need of more detailed disclosure is needed to compare sustainability reports. Several articles claim that non-financial reporting needs changes that would change its foundation of conducting reports, become more in line with traditional financial reporting requirements, and make reports more comparable (La Torre et al., 2020; Amel-Zadeh & Serafeim, 2017).

3.5 All eyes on the emission report

As previously written, emissions occurring from freight fall under a company's Scope 3 emissions. Like many other parts of non-financial reporting, there are multiple ways of reporting these emissions. Having an option based on different accounting measures does create opportunities and threads. As mentioned earlier, the GHG Protocol allows companies to report using three different reporting methods: fuel-based, distance-based, and spend-based. Each of these methods requires different variables, which can result in potential inaccuracies. According to the GHG protocol, the spend-based method does have the lowest reliability but does require the least amount of data. Moreover, companies can still use the spend-based method to report its emission. However, the GHG protocol has stated that they recommend this method for screening purposes since it has high levels of uncertainty in its calculations compared to the other two methods. (GHG Protocol, 2022)

The GHG Protocol has created a decision tree that determines which methods that is best suitable for each scenario *(See appendices figure 2)*. The amount of available data determines the selection of the method. The reporting company aims to rely on primary data instead of secondary data since it imposes responsibility on the firm which produces the emission numbers and allows for better comparison against other companies (Patchell, 2018).

Although, the GHG Protocol can present these methods as self-evident to perform. Meanwhile, for a company, there is significant complexity in obtaining and using this information. First and foremost, in this case, the freight owner needs to be able to deliver the data needed, and the data gathered has to be reliable. Also, obtaining these Scope 3 emissions can be very costly. There are 15 categories to obtain data for to complete the value chain emission, which can be very costly for the reporting company. Secondary data, therefore, have easier accessibility. Meanwhile, the study conducted by Patchell found that obtaining data from first-tier suppliers often brings limited success. Obtaining primary data from each collaboration firm will require extensive work and incur high transaction costs. (Patchell, 2018)

Meanwhile, in this paper, the shipping company is often considered either a first-tier or a secondary-tier supplier. Thereby, the shipping company needs to be able to provide their customers with data significant enough to conduct the reports according to either the fuel-based method or distance-based method. All larger ships within the Nordic region should 2018 already reported their emission through an EU MRV database. This database tracks these ships' emissions and already has a monitoring of these emissions. Afterward, the shipping company must allocate the emissions to the freight company and provide them with emissions data.

For example, the use of Ro-Pax vessels is widespread within the Nordic region compared to other parts of the world. These vessels carry passengers and cargo and must allocate the emissions between these two parts. The standard allows the user to choose between two methods of allocating these emissions: the AREA method and the MASS method. The mass method describes itself by its name. The AREA method allocates emissions based on the area used for transporting cargo and vehicles, and Mass methods allocation is based on allocating per weight of the cargo/vehicle (Fridell, Sköld, & Bäcksröm 2018). The problem occurs when comparing two shipping companies' emissions; their only difference is their allocation method. Thereby could potentially display a more favorable emission report for the reporting company if the shipping company uses a method that favors lower emissions allocated to freight. Furthermore, it can be less motivating for the reporting company to partly spend more money to buy low-emission freight and seek direct

information from the shipping company due to information not being directly comparable. These emission numbers could potentially lead to different outcomes depending on the allocation used by the shipping company.

4. Research question and methodology

This chapter in the thesis will discuss the selected research question and method used to conduct the study. It will go through how the study will be executed in more detail and highlight the relevance of studying this problem from a qualitative perspective.

This case study aims not to highlight the absolute numbers in ESG reporting but instead emphasize the current issues in today's accounting standards. It researches what bottlenecks there are in reporting freight emissions and what information is provided to its stakeholders through its non-financial report.

The research question in this paper is set as the following: *Are there flaws in freight emission reporting, and is the information credible and comparable?*

4.1 Method of choice

This thesis employs qualitative data as its primary source of support. The choice of research method was based on a deliberation between using a qualitative or quantitative approach. The data collected in this thesis will not emphasize hard numbers but rather research the different processes of conducting an emission report based on freight emissions and its eventual difficulties and reporting uncertainties. Therefore, this thesis will not be suitable for using quantitative data. Instead, this thesis aims to highlight the different approaches to reporting these emissions based on the current framework set up by the GHG Protocol. This chapter discusses the reliability and relevance of these reports. In addition, discuss the comparability against other companies' emission reports and the report's usability as a determinant among stakeholders.

This thesis will therefore perform a case study with the support of a document analysis document analysis. This study will perform semi-structured interviews with a depth of how the company reports their emission and evaluate these emissions figures. The interview aims to highlight current bottlenecks in ESG reporting focusing on freight. The first part of the interview focuses on questions from the perspective of "how" and "why" they conduct their

non-financial report. The second part gathers information on their usage of third-party transportation and collection of general variables used to conduct the reports, for instance, the type of vessel used. The third part discusses the method used and data collection in practice. The fourth and last part discusses the report's reliability, relevance, and comparability and whether the interviewees believe there are bottlenecks in the reporting.

In addition, the paper has also conducted a document analysis. The document analysis has collected data from ten randomized companies' non-financial reports. The ten companies are either listed on the Finnish stock exchange or with significant operations in Finland. The data collection has gathered data on what freight information and details the is reported externally to its stakeholders. It also gathers information on reporting methods mentioned and used by companies in the report and discusses whether they have made any notes regarding the assurance of the report. The document analysis has also helped to highlight trends in external emission reporting and set a foundation for understanding obstacles in freight emission reporting from an investor perspective. Additionally, the literature review has helped angle the interview questions to gather more detailed information from the interviewee.

4.2 Research design

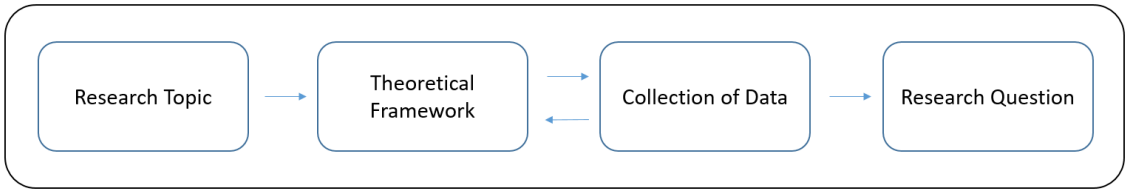

Figure 3, Research design is made by the author

The research designs foundation is set by GHG Protocols standard, more precisely Scope 3 Category 4 and 9. Afterward, collecting data from earlier research on the ESG topic helped the researcher to identify problems in current emission reporting more efficiently. Secondly, when the research topic has been concluded, the theoretical framework in this thesis has

gradually become more detailed. The theoretical framework has been expanded alongside more data collected. After data collection, the research questions have been rephrased and adjusted to reflect the answers from the interviews and the theoretical framework. The reason behind the rephrasing of the research question was done accordingly so the companies' views and opinions would be more strongly represented, and the author could not bias the research question.

The theme of the interview is predominantly questions of their ESG reporting in the aspect of information flows and how they present their freight emission figures to its stakeholders. It discusses the practicality of emission reporting and the current framework for conducting these reports. The results from the interviews will present the key findings in the analysis and results. They gather a summarized answer of whether they believe the information flow between them, and the carrier works efficiently and if they are provided with sufficient emission information. Secondly, the interviewee brings forward the reporting difficulties with a focus on the current framework. The analysis has been conducted using qualitative content analysis. This analysis is best suited for this thesis since the aim is to gather similarities in reporting measures and methods.

4.3 Research Philosophy

Understanding the ontology and epistemology in this thesis makes it crucial to understand the approach toward what is being questioned from a qualitative perspective. Gary Goertz and James Mahoney (2012) describe ontology from a qualitative perspective as "the definition of concepts". The qualitative approach often presents attributes or characteristics to mirror the concept. The ontology, in this thesis, defines and understands the ESG-reporting, more precisely, the frameworks whose primary purpose is to present the true and fair view of a company's environmental impact.

This thesis does not aim to compare companies' hard emission results or to conclude whether any company presents misleading figures, but rather highlight the problematics of reporting their emissions based on the data they can access. Instead, it brings the

epistemology and creates an understanding of the real issue in how the data is presented and how the emissions are received and reported. A qualitative study is a better way to approach the problem in areas that focus more on how to measure the issue rather than defining characteristics issues; a qualitative study is a better way to approach the problem (Goertz & Mahoney, 2012).

The consensus from many sides is that ESG reporting should, on paper, reflect the reality of a company and perceives it to be the ontology. The expectations should be that the formulas set up in frameworks, for example, GRI, will allocate the correct number of emissions conducted by the reporting company. Still, studying the area in more detail makes it clear that the answer is more complex. Gathered data from the interviews, which questions are semi-structured, gathers a more profound understanding of emission reporting, and provides information that is not brought up in the external non-financial reporting. Overall, the study has put its most significant emphasis on the data gathered from the interviews.

4.4 Conducting a case study using a qualitative content analysis

This study employs a case study approach and utilizes qualitative content analysis as its methodology for collecting empirical data. The focus of the study is on large Finnish companies that are listed on the Finnish stock exchange or have substantial operations in Finland and utilize freight transportation. The study is performed through a case study. The choice of performing a case study is due to the questions used in this thesis being asked from a perspective of "how" and "why", which is exceptionally suited when strictly performing this type of study (Kohlbacher, 2006).

A case study investigates the boundaries between phenomena that cannot be placed clearly in a real-life context. It involves examining a phenomenon with multiple variables of interest compared to available data points and necessitates the reliance on multiple sources of empirical evidence (Kohlbacher, 2006). This thesis gathers a broader understanding of the information flow between the shipping company and its customers. It tries to apply the *Sine qua non* commitment to see the social world from the point of view of the person in action

(Bryman, 1984). It extracts information in a pattern that can be reflected in what the customers believe is lacking in the emission information shared and how it implicates their reporting. This type of information is nowhere to be found in the non-financial report. This research questions current frameworks and how they can provide stakeholders with reliable emission information.

The document analysis has helped tremendously in processing the information obtained from the interview. Using a document analysis to support the interview is an excellent way of obtaining information beforehand (Kohlbacher, 2006). In conducting the interview questions, the questions emphasize current non-financial reporting and eventual changes that could potentially improve freight emission reporting.

The interview method chosen is semi-structured. The semi-structured interview is considered the most widely used within qualitative research (Yin, 2016). Semi-structured interviews fit this thesis the best due to it does not present detailed questions to the interviewee but instead encourage the interviewee to discuss the topic and for the researcher to understand their point of view on how the interviewee believes the current emission reporting is working and what it feels is lacking in terms of quality and reliability to gather a more profound discussion between the interviewer and the interviewee (Yin, 2016) (Olson, 2016). Semi-structured interviews are also excellent when the interviewer needs more clarification on the topic and to understand information that is difficult to achieve elsewhere (Olson, 2016).

Many investors benchmark ESG reports even though the reporting method could deviate from another. The qualitative study in this thesis aims to gather a deeper understanding of the determinants of conducting a freight emission report and the limitations and obstacles of reporting these emission figures. Because of these reasons, quantifying the subject is not possible.

4.5 Critique against the method used

From case to case, the method of use can significantly impact the result and how it is delivered. When the research question is directly linked to a quantified subject, in the case of ESG reporting, the selection of the research method can be questioned. In this thesis, the aim is not to create a consensus on how it can affect the company's numbers but rather highlight the reporting differences and how it displays a relevant and reliable picture of a company's actions and whether it can be compared against other companies' emission reports.

The problem with using a qualitative method is how it processes the information from the point of view of an actor, compared to quantitative research, which can collect the data from a more distant, detached viewpoint (Bryman, 1984). Therefore, it can affect the information processed by the writer in terms of misunderstanding parts of the subject and, thereby, presenting an unclear picture of the research topic.

In the past, quantitative content analysis was a widely utilized method. However, it got heavily criticized due to, for instance, latent structures of sense and using individual distinctive cases, but the qualitative content analysis improved in these areas (Kohlbacher, 2006). Moreover, reversing this problem against this method makes it evident that the quantifiable part of comparing scenarios without a bias is unignorable. The writer will conduct the interview questions, which are answered by collected thoughts and then later processed by the writer. In addition, the thesis will only use a stick sample of prominent companies operating in Finland. Therefore, it cannot capture the subjective viewpoint of every individual company.

4.6 Collection of data

The data collected in the thesis is obtained from various sources. The thesis has gathered data from frameworks, earlier studies on ESG and CSR reporting, document analysis on companies' non-financial reports, and lastly, through interviews.

Topics studied within the subject, and the framework used to conduct an emission report have set the foundation for this thesis document analysis. It highlights current problems in reporting ESG numbers and current conceptions from stakeholders regarding the non-financial report topic. The thesis will split up the Category reporting for freight emission and process the different methods used. The document analysis is conducted on ten companies operating in Finland. The document analysis processes their 2021 non-financial report and additional published documents tied to their emission report. The document analysis aims to screen what information is provided through their external reporting to their stakeholders.

Five companies were interviewed, one of which is a shipping company that provides information on the information flow between them as a carrier and their customers buying freight. As a shipping company, it also holds a practical understanding of how well average-based data display accurate figures and use primary and secondary data. The four other interview's goal is to understand their take on the current emission reporting coming from the maritime industry and what improvements they would want to see. Thereby uncovering the epistemology where data can unveil information that in other cases would be buried and, after processing the data, becomes useful (Olson, 2016). The interviews conducted have been with people with high knowledge working with non-financial reporting. The questions asked to have been sent out in advance, so the interviewee has had time to thoroughly read the questions and gather extra information beforehand.

4.7 Research question

The study's research question is, "*Are there flaws in freight emission reporting, and is the information credible and comparable?*" The thesis thereby displays how current reporting standards can obtain and provide relevant and reliable emission numbers for the company, both internally and externally, and highlight the practicality of emissions reporting today and its bottlenecks.

By gathering data that can explain the following question, the thesis can answer how useable freight emission reports are for the stakeholders. It will assess the problems of reporting these emissions and what information stakeholders make their decisions on.

4.8 Limitations

The limitations of this study do not reflect other transport modes' emission allocation and reporting. It does not gather data based on companies that own vessels and work primarily within another segment. This thesis does not reflect precise figures, thereby comparing calculation methods from frameworks only displays the implications of the different methods and interviewees' opinions on these, thereby not displaying the exact mathematical differences between these.

The interviewee's answers in this thesis are based on experience. There will always be more than one opinion regarding a subject like emission reporting, and therefore not be able to gather an entire broad perspective of how all companies combat this problem. The companies interviewed are all within different industries. Since some industries have faced more critique of their ESG reporting, others have yet to prioritize it as much, and answers might differ.

5. Empirical research

This chapter highlights empirical findings tied to the research question. The empirical evidence divides into three parts: the document analysis of randomized annual- and sustainability reports among Finnish-listed companies, the interviews, and the analysis of the interviews.

5.1 Document analysis of annual- and sustainability reports among Finnish-listed companies

A review was conducted of ten randomly selected companies, either with significant operations in Finland or listed on the Finnish stock exchange, utilizing their annual and non-financial reports as well as their GHG inventory reports from the fiscal year 2021. The purpose of the review was to gather information on the framework used to present their non-financial report, the reporting of Scope 3 emissions, and the calculation and reporting of their freight emissions.

Among the ten reporting companies, nine utilized the GRI framework in their reporting, including one company using both the SASB and GRI frameworks. All ten reporting companies utilized the GHG Protocol to provide emission data to their stakeholders. However, only nine of the ten companies reported Scope 3 emissions, with one failing to provide this data. Every company was found to be relevant in relation to freight emissions due to their use of this method of transportation within Category 4. However, of the nine companies reporting Scope 3, only seven reporting companies did even mention their freight in their non-financial report. Category 9 was not considered as relevant to freight emissions as Category 4. Category 9 emissions for many companies occurred only from customers traveling to their warehouses and logistics within Finland, which does not impact freight emissions reporting. No company specifically mentioned freight within Category 9 in their reports.

The GHG Protocol was the most commonly used standard for calculating these reports. However, one company mentioned the use of EN 16258 to support calculating their emissions. The reports submitted by the companies were diverse in both form and content,

with varying levels of information provided. One company, for example, only provided minimal data by mentioning the total emissions of Scope 3 combined. Only four GHG inventory reports were identified among the companies reviewed. Among the methods used to collect data for these reports were:

- Emissions data from third-party
- Secondary data collected from VTT Lipasto, Liisa database
- EN 16258
- Cost-based reporting

Overall, the information disclosed in the non-financial and annual reports was limited in terms of their Scope 3 emissions. Most of the companies did not specify the specific amount of primary and secondary data used, although a few companies stated their use, and the results varied significantly. For instance, one company reported that its upstream and downstream primary data accounted for 75% of its emissions, while secondary data accounted for 25%. Meanwhile, another company only obtained 60% primary data for its upstream transportation emissions and only used secondary data for its downstream transportation emissions.

The comprehensibility of the reports is limited; comprehending them from an investment viewpoint is challenging. The reports provide limited information on the variables used for the reporting process. Additionally, it is also uncommon for the reporting company to specify the selected reporting method from the GHG Protocol.

5.2 The interviews

5.2.1 Viking Line Abp

The Finnish Shipping company, Viking Line, operates a fleet of Ro-Pax vessels in the Baltic Sea and generated revenues of 258.2 million euros in the fiscal year 2021, of which 41.1 million euros came from freight (Viking Line, 2022). The interview was conducted with Dani

Lindberg, the Sustainability Manager & DPO of Viking Line, on 31 October 2022. During the interview, Lindberg spoke about the current use of emissions reporting from their freight and their dialogues with customers regarding the use of emissions information.

Lindberg expressed his interest in this topic. He states that many companies have set goals to become carbon neutral. However, for companies to achieve carbon neutrality, they must take responsibility for their Scope 3 emissions. As the shipping industry covers almost all of Finland, providing emission data to their customers is not highly topical at their level. Although, customers do periodically ask for emission data from their transport.

Since 2018, Viking Line has been submitting their emission figures to MRV, and they direct customers to these numbers when asked for emission data. However, in practice, it is rare for large companies to request emission data from Viking Line, and believes it could be that reporting companies already established their own emission reporting templates. On the one hand, smaller logistics companies tend to ask for emission data more often, according to Lindberg.

The comparability of emissions coming from Ro-Pax vessels is hindered by the allocation of emissions between passengers and cargo. The allocation of emissions can be done using two different methods. Viking Line considers themselves a passenger ship, and most requests for emissions impact come from the passengers; therefore, Viking reports using the area method, while their most significant competitors use the mass method. Thereby it creates challenges for transport companies when comparing their emission figures with those of their competitors.

In addition, he believes that using reporting methods that rely on average-based data requiring minimal carrier-provided information can potentially misrepresent a company's emission numbers. Such reporting practices favor underperforming companies. According to him, this reporting framework reduces the incentives to pay a premium for low-emission freight.

Furthermore, Lindberg suggests using primary and secondary data to provide different emission scenarios. He recommends that companies should prioritize primary data

as it accurately reflects emission improvements, unlike average-based data, which fails to provide an accurate view.

In general, Lindberg advocates for a system comparable to MRV, where all shipping companies disclose audited emission figures in accordance with a standardized reporting system, thereby increasing the comparability among shipping companies.

5.2.2 Kemira Oyj

Kemira, a prominent Finnish-listed stock included in the OMXH30 index, is a world leader in providing sustainable chemical solutions for water-intensive industries, with revenue exceeding over 2.5 billion euros in 2021. The interview was conducted with Jori Fabricius, Senior Vice President of Global SCM of Kemira on 22 November 2022. Fabricius possesses a comprehensive understanding of their developed emission calculation tool's strengths, weaknesses, and limitations.

In the process of calculating and reporting emissions, two key points need to be considered. Firstly, the external emission reporting presented by Kemira is very simplified, and secondly, the most central use of the data is for their internal reporting and decision-making. Kemira uses volume-based reporting, which combines data variables with average-based data. Global Logistics Emissions Council (GLEC) has developed a methodology and reporting system that applies to all transport paid by Kemira. The system collects comprehensive transport details and utilizes a GHG intensity factor that varies based on factors such as transport mode and region, which are updated annually.

The emissions numbers the reporting model produces allows Kemira to trace specific emission numbers' origin. It also allows them to visually see how much each of their customers emits. This reporting model prioritizes standardized variables that the shipping company otherwise would have had to provide Kemira. Using average-based numbers, Fabricius argues it enhances its comparability and serves as a tool to decrease Kemiras emissions. Jori opines that the methodology used by Kemira is highly accurate and neutral in its reporting.

Nonetheless, this hybrid model precludes Kemira from collecting primary emission data. Jori acknowledges that gathering primary data from the shipping industry is currently impractical. Acquiring data from all Kemira shipments would necessitate an extensive amount of effort, as per Jori.

However, this reporting model precludes Kemira from collecting primary emission data. Although Jori believes using primary emission data directly from the shipping industry is currently impractical. Acquiring data from all Kemira shipments would necessitate an extensive amount of effort. He said: "*There is no payback for doing that; I would get that fancy information, but on the second hand, I know that it is not credible enough because it is not comparable because every company has their own way of reporting and calculating their own emissions.".*

Fabricius also said: *"We are using hundreds of different carriers, and very rarely you are getting the emissions from your carriers. The other thing is that the calculation methodologies which they have is very often poorer than what we have, and this is a neutral way to calculate to it.",* in an expression of how challenging it can be to collect data from shipping companies. Currently, Fabricus does not believe in a full coverage methodology and says: "*Collecting the information from the carrier, my suggestion here and also GLEC suggests it is a waste of time very often. It is important to collect that, but to make it a full coverage methodology is a bit artificial, to be honest.".* However, the use of, for instance, Spend-Based Method is not a solution to providing emission data to a company's stakeholders. Data entirely set up by average-based data cannot hold high reliability.

He states that their current method of calculating emissions is commonly accepted even though this reporting simplifies parts of the calculation of the reporting. However, to improve reporting, Jori believes the most efficient way to influence and improve reporting is through stronger regulations. Also, there is a need for new legislation which must be able to be monitored. The legislation also needs to have a practical effect. Regarding external reporting, Scope 1 and Scope 2 should be separated from Scope 3 since these emissions are not tied directly to the company and the company.

According to Fabricius, while their current emissions calculation method is commonly accepted, it simplifies certain aspects of the reporting process. He contends that the most effective way to enhance reporting is through stricter regulations. Furthermore, the new legislation should be enforceable and practically effective. Concerning external reporting, Fabricius suggests that Scope 1 and Scope 2 emissions should be differentiated from Scope 3 emissions since Scope 3 emissions are not directly linked to the company.

5.2.3 Company A

This company is a sizeable Finnish-listed stock company operating in the Finnish forestry industry. They are among the leaders within their sector, have over 10 000 employees, and their annual revenue measures in billions of Euros. Interviewee A is a Senior Sustainability Manager who has been working on ESG tasks within the company for the past decade. The interview took place on 14 November 2022. They requested to remain anonymous.

Freight constitutes a significant portion of their emission reporting, with logistics accounting for almost 20% and Scope 3 emissions representing two-thirds of their overall emissions. Interviewee A explains that Category 9, which covers emissions further into the value chain, is challenging to manage and obtain primary data due to the substantial workload and communication required with suppliers further in the value chain. Therefore, obtaining primary data to report Category 9 using primary data would require a tremendous workload and be very challenging to affect. Additionally, when purchasing freight, they opt to charter entire ships or buy larger quantities, such as whole containers, to gain better control over their deliveries and data.

In their reporting, Interviewee A said they were not using the Spend-Based method and advocated using the Distance-based method. They collect primary data within the most significant categories, including logistics, and in 2018, initiated a project to request primary data from their 15 most prominent companies. However, the data quality varied among the suppliers. Additionally, Interviewee A states that they currently focus on obtaining primary data within the critical categories to which Category 4 belongs.

Nonetheless, he acknowledges that collecting these emissions data requires significant effort and can be time-consuming. He says, *"Our approach is to use as much primary data as possible to get with reasonable effort."*. He suggests they prioritize gathering data from sources affecting their emissions reporting and allocate resources accordingly. Moreover, they have observed that data quality can be inconsistent, sometimes receiving incorrect data due to what he believes is suppliers' misunderstanding of the required variables.

Interviewee 2 believes that the data quality must improve in the future and align with financial reporting's reliability, especially since meeting ESG targets can result in management receiving bonuses. He emphasizes that Scope 1 and Scope 2 are more important, while Scope 3 currently holds less reliability. Nevertheless, based on experience, he believes that regulations and taxonomy are becoming excessively detailed and do not reflect different industries. He says: *"The truth is that big companies are able to report these things";* take on current reporting regulations. He asserts that they have been able to meet up to current regulation requirements; however, it is already very challenging to fulfill current reporting standards.

5.2.4 Company B

This company works within the retail industry. It primarily operates in the electronics segment, but it also sells products in other areas. The company is listed on the Finnish stock exchange and has over 800 employees with revenue exceeding 500 million euros in 2021. The interview was conducted on 5 December 2022 with Interviewee B, who is a Sustainability Manager and has worked with CSR tasks for the last 14 years. 2021 they launched their Scope 3 calculations. Interviewee B asked to remain anonymous.

As of its recent launch, the company has not yet had time to improve its Scope 3 emissions. Instead, focus on improving its reporting. They have had the help of Gaia Consulting, a consulting firm focused on sustainability. Today, the reporting company's logistics emissions are below one percent. Their emission figure is low compared to their

entire Scope 3 due primarily to accounting for emissions attributed to their products sold in which electronics generally have high GHG emission cycles. When procuring freight services, the company's logistics sizes can range from small packages to containers, for which they contract third-party logistics companies.

During their emission data collection, the logistics companies are asked to provide necessary data, but the quantity and quality received varies. Some companies provided little to no data, while others provided sufficient data. Around 30% of their partners requested a payment between 100-500 euro to provide them with the asked emission data.

Interviewee B believes logistics reporting is more concretized than many other categories in Scope 3. She also thinks the Spend-based method could be helpful early on in reporting emissions, but it is not practical for managing and reducing emissions. They pass on the emission data they receive to Gaia Consulting, who evaluate the numbers for reliability.

For the future, she supports the idea of implementing details of emission reporting similar to notes in financial reporting. It would enable stakeholders to gather a better overview of companies reporting methods and thereby increase the comparability between them. She also believes that verification of emissions would strengthen reporting. Although, she expects that the subsequent emission reporting draft by the European Union will include similar proposals. Nonetheless, she also believes they will apply further regulations to the reporting in their next EU draft for emission reporting. However, she states that emission reporting is very time-consuming and describes it as follows:

In the future, Interviewee B endorses the notion of including emission reporting details similar to what notes are in financial reporting, thereby enhancing stakeholders' understanding of a company's calculation methods and improve comparability between companies. She advocates for emission verification to strengthen the reporting and expects similar proposals in the upcoming European Union emission reporting draft. However, she also expects additional regulations for emission reporting in the next EU's sustainability draft. She acknowledges that emission reporting is time-consuming and describes it as follows: *The problem here is even though our company may feel like a substantial size, when*

coming to these reporting regulations, we do not have this many reporting resources, and now when the regulations are increasing, we actually have to hire more people to do this.". Moreover, she hopes that future implementation of electronic reporting will improve current non-financial reporting.

5.2.5 Company C

This company works within the retail industry. The company is listed on the Finnish stock exchange. It had over one billion euro in revenue in 2021, and the company sells products across multiple segments. The interview took place on 9 December 2022. In the interview, two employees participated; Interviewee C1, who serves as the Head of Corporate Responsibility, and Interviewee C2 is working on collecting emission data. The interviewees asked to remain anonymous.

The company has focused on collecting data directly from its suppliers. The data they collect falls along with the distance-based method. A third party later verifies the data they use and report. The emission data collected from some of their partners contains good data. However, there are shipping companies that provide them with lesser data, for example, only their carbon footprint and no other variables.

The company's primary strategy for data collection involves direct engagement with suppliers using the distance-based method. They later verify the collected data with a third-party company. In general, the data they receive is considered to be of good quality. However, the data quality from some shipping companies tends to vary, with some providing only basic information, such as carbon footprint, without other relevant variables.

When queried about the potential variability of information quality and reliability, Interviewee C2 responded: "*Yes, I do think so. Those who source everything, they are more reliable than those who only give us the carbon emission figure. We do not know how they calculate it, but the bigger reports tell us how they have calculated it and provide us with other information".* In order to improve this reporting issue, the reporters require more comprehensive data from the freight companies.

Currently, they report their emissions based on the data they can obtain. It can be challenging to obtain comparable data from suppliers. Although they acknowledge that there are more reliable reporting methods than the Spend-Based approach for freight emissions, they contend that it is the best method to calculate emissions within specific categories compared to other alternatives available for reporting companies.

The interviewees anticipate that future reporting should entail more precise and reliable data, including for the entire Scope 3. They expect increased regulations and improved technology to enhance the accuracy of emission calculations and reporting. They express some optimism that suppliers will be able to provide assured emission data in the future but acknowledge that achieving this may take considerable time.

5.3 Analysis

All interview reporting companies followed the GHG protocol guidelines for their emission reporting, but their method for collecting data differed. They all stated they used the Distance-based method based on variables discussed in the interview. As did they believed the Spend-based method could misrepresent logistics emissions, which goes along with the GHG protocol's recommendations to use it for screening purposes (GHG Protocol, 2023). However, there were differences in how the companies collected its data. Company B and Company C reported all their emissions based on carrier information, while Company A focused on gathering emission data from sources that significantly affect their reporting numbers.

However, a trend emerged among the interviewees regarding the collection of carrier emission data. All companies that collected data directly from shipping companies expressed their concerns about inconsistent data quality, often due to incorrect or incomplete data. Therefore, resulting in the need to request data repeatedly from the shipping company, which is time-consuming and resource intensive. Furthermore, the reports obtained were only occasionally comparable due to concerns about the data quality. Additionally, one reporting company mentioned was charged by approximately a third of their partners for providing the emission data. Also, Viking Line expressed that it is most common among smaller companies

to request this type of emission data from them. Although they are aware that at least allocation with their vessel type, emissions can be allocated differently, thereby could present misleading comparability numbers between them and their competitors.

Kemira has adopted a different approach for reporting its emission data. Instead of relying solely on primary data from shipping companies, they have opted for a model developed by GLEC, which obtains key transport variables and GHG intensity factors for each mode. They have collected primary data from sources other than the shipping company and applied average-based data to data specifically from the shipping company. Kemira states that collecting primary data would require tremendous work and believe the data they are using currently display closer to a correct picture. They argue that this methodology allows them to report emission data neutrally and more efficiently without expending significant time and resources. According to Fabricius, this approach allows them to report emissions accurately and make informed decisions internally based on their reported data.

In the future, the interviewed companies anticipate increased regulations for reporting emissions. They acknowledge that non-financial reporting is time-consuming and requires significant effort to produce. They suggest that a standardized reporting method is necessary to achieve more comparable and consistent results. The interviewees propose more regulations and stricter standards but also emphasize the need for a clear purpose behind these changes. Larger companies find that current reporting requirements are exhausting even at their level and believe it could affect smaller companies even more.

Company name	Reporting framework	Reporting Scope 3?	Calculation method	Precise information of emissions freight?	Publishes a GHG inventory report?	Use of primary data and secondary data
SSAB Ab	GRI	Yes	Information provided by third party transporters. Uses ton/kilometer and km-based variables.	Uses primary data which has been sent by the providers. Emssions for bulk carriers has been estimtated thorugh sea rates website.	No	No official Scope 3 GHG inventory report
Kesko Oyj	GRI	Yes	Factors used: Milage, transport volume, transport modes, vehicle types specific emission factors.	Primary data: Pre-calculated emission data from their operation system "Kesko Logistiikka" which data is recevied by its transport providers. Additionally uses Emission factors from VTT Lipasto, Liisa database	Yes	Category 4: 75% primary data and 25% secondary data. Category 9: 70% Primary data and 30% secondary data.
Stora Enso Oyj	GRI & SASB	Yes	No precise method stated apart from using estimated emission factors from external databases.	No precise information on emissions from freight.	No	No official Scope 3 GHG inventory report.
Metsä Group Oyj	GRI	No	-	-	-	-
S-Group	GRI	Yes	Information is provided by their logistic partners. The coverage is however only within Finland. Secondary fuel emission factors used are collected from VTT Lipasto database.	No precise information on emissions from freight.	Yes	Category 4: 100% primary data, however, does not report emissions occuring outside of Finland, which can indicate they do not collect and report freight emissions outside the country. Category 9: 0% primary data .
UPM-Kymmene Oyj	GRI	Yes	Primary data involves travel distances, quantities of raw materials and specific emission data from suppliers. Secondary data is collected from VTT Lipastos database.	No precise information on emissions from freight. Only exception made is that they strive to obtain more primary data from their logistic partners.	Yes	Category 4: 60% primary data. Category 9: 0% primary data.
Orkla ASA	GRI	Yes	Primary data is collected from their partners performing the logistics. Has not provided what type method is used nor variables used.	No precise information on freight emissions.	Yes	Category 4: 100% primary data. Category 9 100% primary data.
IKEA Group	GRI	Yes	Calculating their shipment using the EN 16258 standard.	No precise information on freight emissions.	No	No official Scope 3 GHG inventory report.
Posti Group	GRI	Yes	Does not specifically provide information on freight, but their Scope 3 uses cost based method.	No specific information of their except that their subcontract transportation accounts for 50% of its Scope 3 emissions.	No	No official Scope 3 GHG inventory report.
Postnord Ab	GRI	Yes	Uses a transportation management system. Transport operations are later recorded and calcualted using Ton/kilometer variables.	No precise information on freight emissions.	No	No official Scope 3 GHG inventory report.

Companies	Sector	The interviewees positions	Length of the interviews	Reporting method	Use of primary data	Reporting difficulties	Reporting improvements
Viking Line Abp	Shipping	Sustainability Manager & DPO	00:34:27	They are reporting emissions based on MRV figures. However, Viking Line uses the AREA method compared to their competitors, which use the MASS method.	-	-Emission allocation concerns among Ro-Pax vessels. -Low interest in Primary data among customers. -Importance of using primary data.	- Shipping companies could provide emission data to a verified webpage reporting under the same methods to increase their comparability. - Remove the opportunity to report emissions according to average-based numbers.
Kemira Oyj	Chemicals	Senior Vice President, Global SCM	01:08:12	Distance-based method	It uses primary data to cover the distance-based method. However, they do not collect primary data directly from shipping companies.	-Not enough reliable data from shipping companies. -Impractical to collect primary data	- Stricter and more practical regulations
Company A	Paper, Pulp & Timber	Senior Sustainability Manager	00:43:13	Distance-based method	Uses primary data from their most significant partners.	-Data quality from suppliers. -Low reliability in current emission data. -Providing bonuses to boards achieving specific emission goals. -Time-consuming	- Standardized reporting framework
Company B	Retail	Sustainability Manager	00:27:18	Distance-based method	Yes, the main goal is to obtain data from shipping companies.	- Requested to pay a fee for emission data. - Sending reminders to obtain the data Reporting standards are very resource-heavy.	- New regulations drafts by the EU. - Need for increased reliability and relevance. - Emission verification by a third-party.
Company C	Retail	Head of Corporate Responsibility	00:29:47	Distance-based method	Yes, the main goal is to obtain data from shipping companies.	- Data quality can vary between companies, and where some reports do not present all necessary data. - Some categories lack detailed emission calculation methods, which makes the spend-based method the best available calculation method.	- More detailed emission data from the suppliers. - Need for greater comparability from the whole Scope 3. - Better tools for reporting emissions. - Stricter regulations.

6. Results

This chapter provides the results from the document analysis of the ten non-financial reports and the five conducted interviews. The empirical results are evaluated based on the reporting recommendations from the GHG protocol and its implications on the stakeholder and legitimacy theory. Primarily, the results discuss these emission numbers' relevance contra reliability and their internal and external reporting comparability.

At present, Scope 3 emissions are considered to be the primary source of carbon emissions from the majority of companies (European Commission, 2023), whereas reporting on Scope 1 and Scope 2 is deemed relatively straightforward. However, obtaining and presenting a company's Scope 3 emissions can be challenging (European Commission, 2023). Currently, the requirements for reporting emissions, chiefly Scope 3 emissions, are loose. This paper focuses particularly on Category 4 and Category 9 among the 15 categories included in Scope 3.

To comprehend reporting behavior, understanding reporting incentives is essential. Currently, no reporting requirements force companies to report their Scope 3 emissions. However, companies still allocate resources to conduct a complete emission report. Using the stakeholder theory, it quickly becomes evident that among the most important stakeholders are the shareholders due to their relationship being deemed necessary and compatible (Friedman & Miles, 2002). Another significant influencer in the reporting is the European Union. The interviewees expect more requirements and regulations for non-financial reporting, which have put pressure on them. Furthermore, many companies have committed to Science-Based Targets to limit global warming to 1.5 degrees Celsius, requiring them to address and report their Scope 3 emissions.

Evaluating the current emissions reporting from legitimacy theory, you can quickly identify its influence on the current emission reporting. It is apparent that there are resemblances with the macro stream Matthew (2004) explained. Reporting companies must comply with the statutory laws established by the European Union, while also seeking

assistance from external organizations such as the Science Based Targets initiative. As Matthew (2004) elucidates, companies aim to align their decisions with societal values to gain acceptance from the community. However, the second stream, which centers on companies seeking approval to evade sanctions (Matthew, 2004), has not been detected in this thesis.

The current emission reporting standards do not mandate the reporting of Scope 3 emissions. Nevertheless, companies reporting Scope 3 logistics emissions have the flexibility to choose between three calculation methods, giving an impression of relatively relaxed reporting standards. These methods will enable the company to present its emissions in various ways depending on their engagement and goals set with their transport providers. The Fuel-based Method requires the most shipping data, while the Spend-based method requires significantly less. Moreover, interviewees agree that freight emissions reported using the Spend-Based Method pose a risk of presenting a misleading view of a company's emissions freight emissions.

The interviewed companies showed varying degrees of reliance on primary and secondary data. Two companies depend entirely on shipping companies' data. One of the larger companies interviewed stated that it partly relies on primary data and focuses on collecting primary data from its most significant emitting partners. The fourth company gathers primary data from ports to determine the distance traveled and utilizes average-based data to calculate GHG-intensity factors based on several variables such as region, fuel types, and average load factors for freight.

However, Viking Line (2022) stated in its interview that comparing average-based secondary data to primary data cannot display actual emission figures. His statement is supported by the GHG protocol, which also advocates using primary data. Furthermore, to obtain these emission numbers, the shipping company has to be able to collect the necessary data. Moreover, all reporting companies expressed that obtaining this data type was not streamlined and error-free. The most evident problem was the quality of data. Companies faced challenges with the quality and comparability of the data received from their logistic partners, which led to some having to send reminders to obtain the necessary information.

Additionally, one company reported having to pay a fee to access emission information from some partners.

Using primary data as the primary source has evident advantages, allowing for precise data collection from specific shipments and sources with essential information. However, relying on primary data means that reporting companies must trust the accuracy of the emission figures without necessarily reviewing the data received. While the European Union requires freight emissions to be monitored and reviewed since 2018, the reporting in the shipping industry is not perfect, and proposals have been made to improve it. For instance, discussions of emission allocations within the maritime sector have led to proposals for standardizing reporting. In the Baltic Sea, Ro-Pax vessels are prevalent, and two different methods can be used to allocate emissions between passengers and cargo. As a result, the emission figures vary depending on the method used, and companies using different methods cannot be compared. To address this issue, Lindberg proposes a platform where all shipping companies could provide their emission numbers and report under the same method, increasing comparability for customers.

The advantage of using primary data as the main source is evident. It allows companies to gather precise data from a specific shipment and from a source that should have all essential data. However, using primary data means that the reporting company must solely trust that the emission figures are correct. The data the reporting company receives have not necessarily been reviewed. However, European Union has required since 2018 that freight emissions are monitored and published to MRV, which are reviewed. Although, the reporting within the shipping industry is not flawless. Discussions of emission allocations within the maritime sector used for logistics have been discussed, and proposals have been made to improve the reporting (Zhu, Erikstad & Nowark, 2014). The Ro-Pax vessel is one of the most widely used vessels in the Baltic Sea (Finnish Shopowners' association, 2022). The Ro-Pax vessel allows for two different methods, the AREA method and the MASS method, to allocate emissions between passengers and cargo according to MRV standards. Depending on which method the shipping company reports to, the emission figure varies, and shipping companies that use different methods are not comparable against one another, which Lindberg, Viking Lines sustainability manager, confirms. To address this issue, he proposes

a platform where all shipping companies could provide their emission numbers and report under the same method, increasing comparability for customers.

Furthermore, using average-based data partly does provide the reporting company with advantages. Moreover, Kemira's approach offers a tool that provides current and highly relevant data, making it beneficial for their decision-making. By using their model, they can compare emission figures and ensure the numbers are reasonably accurate. Both Company A and Kemira stated that the data provided by shipping companies could be inaccurate. Company 2 believes the reason is that the shipping company lacks the understanding of the specific data they want to obtain. Jori Fabricius, Senior Vice President Global SCM at Kemira, believes that using their model, instead of collecting all primary data from different shipping companies, provides a more accurate view of their environmental impact by enabling them to report their emissions more neutrally. He claims: "*You need to ask the question. This is the kind of science where you are somewhat right rather than totally wrong. Because let us say you start to measure too accurately, the variation is so significant you can probably prove yourself wrong. If you have a standardized way to calculate, it gives you ammunition to manage the emissions. You do not have to be right or wrong, but you have the capability to compare what your trendline is and see that you are doing it in the right way.*"

The study has collected empirical evidence from ten non-financial reports, which believe companies provide a vague view of their Scope 3 reporting, particularly regarding precise transportation calculation methods, and rarely disclose the method. However, some companies did provide information on the amount of primary data used to report for specific categories through their Scope 3 inventory data. The Scope 3 inventory data could also disclose variables used to calculate the emissions.

Allowing companies to report using the Spend-based method without specifying the calculation method and the absence of regulations for auditing the figures increase the risk of unreliable data. Moreover, gathering primary data from shipping companies is highly time-consuming for the reporting company. Due to the inconsistent data it receives, the relevance of the data is affected. Furthermore, allowing these types of different reporting methods indicates that the GHG Protocol favors companies to present a freight emission report but is at the cost of comparability between companies.

In order for an investor to interpret and compare information published in the non-financial report, it requires disclosure standards or common reporting practices (De Silva & De Seliva Lokuwaduge, 2020). They need reliable and relevant ESG information that clearly states all methodologies and analyses (De Silva & De Seliva Lokuwaduge, 2020). Moreover, the empirical research from document analysis indicates that current non-financial reports fail to provide sufficient data on freight emissions to stakeholders. The non-financial reports provided by companies frequently fail to sufficiently address the methodology used for data collection and the reporting procedures utilized and often provide limited information regarding the uncertainties in the reliability of the figures. This lack of transparency renders the information of limited relevance.

However, these reporting difficulties cannot be attributed to the companies. Addressing these reporting uncertainties may require more detailed reporting, but the purpose of these changes must be practical. The reporting of freight emissions follows the whole value chain, and the reporting resources are limited. Moreover, the reliability in emission figures must become more reliable. This thesis proposes that a more specific emission reporting standard should be set for freight emissions in order to increase the comparability between companies. Another significant problem identified in the interviews is the obstacle of obtaining the correct data from the shipping companies. The data obtained from shipping companies have to become more pragmatic. The data shipping companies provide to the reporting company should be standardized in order to strengthen its reliability and relevance. Otherwise, if that is not achievable, a proposal similar to Kemira's current reporting is a possibility. It at least provides the company with current and relevant data that helps them in their decision-making and creates a freight emission report that is somewhat reliable and comparable.

7. Discussion and conclusion

The empirical research suggested by applying the standards set by the GHG Protocol that freight emissions are difficult to compare between companies. The current framework allows companies to report their freight emissions using different methods. The collection of primary data from shipping companies tends to vary in reliability, according to the interviewees. In addition, the collection of the data has imperfections. Requested data is not consistently delivered upon request, and some companies require a minor fee to provide the reporting company with this type of emission data.

Due to current reporting bottlenecks and uncertainties in the reporting's reliability, it can be tempting for a reporting company to use a hybrid model for reporting its freight emissions. This reporting model allows companies to get current and relevant emission numbers and can be used in decision-making. However, the downside of reporting using this tool is the lower reliability of the actual emission numbers. Nonetheless, the primary numbers the reporting company is presented with do not necessarily have been reviewed by a third party priorly.

Moreover, based on the document analysis, from an investor standpoint. Making decisions based on freight information published in non-financial reports is highly improbable. The information contained in the ten reports was distinct and differed from one another. However, the majority of the reports contained little to no data on the reporting method. Therefore, the information provided in the non-financial report needs to provide more relevance for the stakeholder in presenting, for example, calculations and methods used in conducting the emission report.

The paper finds that current emission reports fail to provide a precise image of their Scope 3 freight emission report. The argument rests on the observation that the reporting can be done in different ways, and without the use of notes similarly to financial reporting. The study finds that stakeholders cannot make fully informed decisions based on the information provided in the emission reports. Furthermore, based on the interviews conducted, the data quality varies among freight companies, and in the absence of a standardized set of data to

be included and sent to the reporting company, the quality of reporting will always be affected.

Additionally, due to the low reliability of the primary data collected by the companies, this thesis finds it hard, based on empirical research, to argue for low-emission freight from an accounting standpoint. The main aim of an emission report is to provide its stakeholders with a comprehensible view of the company's environmental impact. Moreover, when freight emissions can be reported without comparable data and reported in various ways, and considering what Thornton debated (1993), that business is insufficient to account for environmental degradation. It is difficult to pay a premium for a product that the stakeholder cannot objectively understand, considering current freight emission reporting requirements.

Further research and contributions

In this paper, the emission reporting chain for freight emissions was examined. The analysis revealed that the published Scope 3 emission reports provide a limited understanding of a company's environmental impact, which can be attributed to the lose requirements set by the GHG Protocol. The finding in this paper can be partially extended beyond other parts of the logistics industry. The paper has only examined the reliability and relevance behind the emission numbers produced by the freight company and later reported by the reporting company. The author argues for further research on suitable reporting standardizations to improve reliability and relevance for reporting freight emissions. Furthermore, it should focus on how to reduce the bottlenecks of collecting data and making freight emission reports more comparable.

8. Finns det brister i rapportering av fraktutsläpp samt är denna information pålitlig och jämförbar?

8.1 Introduktion

Med tiden har begreppen hållbarhet och hållbart ansvar tagits upp allt oftare. Ser man tillbaka så lite som 30 år, kan man se hur företagens ansvar gentemot miljö och människor blivit betydligt mera påtagligt. Dels kan det här ses som något lagstadgat där bolag behöver följa eventuella lagar och beslut som kan anknytas till Förenta nationernas mål om att hålla den globala uppvärmningen under två grader Celsius. Utöver det här finns det även nya förslag som ”Fit for 55 Climate Package” av Europeiska unionen om att reducera utsläppen med 55 % före 2030 med 1990 som jämförelseår (UN, 2021 & EC, 2021). En annan orsak till att det här fått en så stor betydelse bland företag kan reflekteras i investerarnas intressen. Investerare har med tiden fått ett ökat intresse att placera mera hållbart.

Företag visar sitt ansvarstagande för sina intressenter genom att publicera sin icke-finansiella information berörande dess verksamhet. Den här typen av information bör avspegla företagets samhällsansvar. Information kan sedan brytas ned i mjukdata som egentligen beskriver hur företagen har gått till väga för att ändamålsenligt förbättra sin inverkan på samhälle och natur. Utöver mjukdata finns även hårddata. Väldigt likt den finansiella redovisningen, rapporterar företagets hårddata dess sociala ansvar och klimatpåverkan i hårda tal. Dessa hårda tal ska därmed rapporteras under tre olika huvudkriterier och mäter väldigt olika delar av företagets samhälleliga ansvar, vilket kallas för ”ESG”. ESG är en förkortning och bör beskriva ett företags: ansvar jämtemot miljön (eng: Environmental), dess samhällsansvar (eng: Social) och styrning (eng: governance). Målsättningen bakom den här avhandlingen är att fördjupa sig i miljörapporteringen och dess styrkor kontra svagheter med nuvarande rapporteringsstandarder med fokus på sjöfart. Avhandlingen fördjupar sig därmed i hur rapporteringen sker ur en praktisk synvinkel med fokus på sjöfartsemissioner samt hur väl de data som fås och publiceras håller hög trovärdighet och relevans. Den kommer dessutom utvärdera ifall utsläppsdata från sjöfarten kan användas som ett verktyg i investeringssyfte.

8.1.1. Problemområde

Under 2020 publicerade KPMG en rapport där de fann att uppskattningsvis 80 % av alla världens bolag, och 90 % av alla världens allra största bolag publicerade en icke-finansiell rapport (KPMG, 2020). Detta är en tydlig trendökning i jämförelse med en rapport publicerad 1993 där enbart 12 % publicerade en icke-finansiell rapport (KPMG, 2020). När både intresset och mängden rapporter ökat, torde även kvalitén uppskattningsvis förbättrats. I dagsläget används dessa rapporter som underlag till bland annat investeringsbeslut. Informationen som är publicerad i dessa rapporter behöver därmed ge en trovärdig och relevant bild av bolaget. Målsättningen bakom den icke-finansiella rapporteringen är därmed att identifiera, planlägga och genomföra hur företaget skall handskas med samhällsproblem som uppkommer från dess egna verksamhet. Tyvärr har Porter, George Serafeim och Mark Kramer (2019) kommit fram till att många av dagens företagsledare använder den icke-finansiella rapporteringen som ett verktyg för att stärka företagets rykte och attrahera investerare som har nischat in sig på hållbara investeringar.

Hållbarhetsrapportering är i regel inte tvingande till skillnad från den finansiella rapportering som är ett krav i aktiebolag. Dock är Europeiska unionen ett undantag där det lagts krav på att bolag som antingen har mera än 500 anställda, är börsnoterade, verkar inom bank- och försäkringssektorn eller företag som staten har inflytande i måste upprätta en icke-finansiell rapport över sin verksamhet (EU, 2022). I jämförelse med den finansiella rapporteringen är kraven hur informationen ges ut inte lika strikt som i den finansiella rapporteringen. De generella standarderna för hur företag publicerar sin icke-finansiella information är med hjälp av standarderna ”Global Reporting Initiative” (Förkortat GRI) och ”The Sustainability Accounting Standards Board” (Förkortat SASB). Dessa standarder ger målsättningar och krav för hur en icke-finansiell rapport ska presenteras.

Både GRI och SASB har rekommenderat användningen av ”The Greenhouse Gas Protocol” (Förkortat GHG-protokollet). GHG-protokollet är ett standardiserat ramverk vars mål är att mäta företags växthusgaser. Detta görs genom att mäta och rapportera utsläppen ur tre olika omfång (På engelska: ”Scope”). Det första omfånget mäter ett företags direkta växthusgaser som uppkommer från deras primära verksamhet. Det andra omfånget mäter växthusgaserna som kommer från den energi som företaget köper. Det tredje, och kanske det

svåraste omfånget att mäta, mäter alla utsläpp som uppkommer från hela värdekedjan. Det tredje omfånget har totalt 15 kategorier som ska reflektera utsläppen som uppkommer från värdekedjan. Kategori fyra och nio reflekterar företags upp- och nedströms transport och distribution från och till andra leverantörer samt transporten mellan företagets egna utrymmen. Inom dessa två kategorier räknas frakten in. (GHG-protokollet/GHG Protocol, 2022)

Frakt kan beräknas hos företagen genom tre metoder, Fuel-Based Method, Distance-based Method och Spend-based Method**.** Dessa metoder beräknas alla på olika variabler men rapporteras på samma vis. Även ursprungsrapporteringen av utsläpp från sjöfrakten kan allokeras enligt två olika standarder vilket hänför sig till hur primärdata och sekundärdata egentligen bör användas för att rapportera.

8.1.2 Forskningsfråga

Avhandlingens forskningsfråga är: *Finns det brister i rapportering av fraktutsläpp samt är denna information pålitlig och jämförbar?* Forskningsfrågans målsättning är att reda ut hur rapporteringen av fraktutsläpp fungerar till pappers samt att jämföra hur det sker i praktiken. Därefter görs en jämförelse av huruvida rapporteringen av utsläpp skiljer sig bolag emellan samt exemplifieras problem med att rapportera fraktutsläpp i praktiken.

8.2 Rapporteringen av frakt

I denna avhandling har rapporteringen av frakt delats upp i tre delar. Dessa delar förklarar hur bolagen rapporterar data från fraktbolagen, vilka kalkylmetoder som används till rapportering av bolagets utsläpp samt hur bolagen använder sig av primär- och sekundärdata i rapporteringen.

Det första man måste begripa är vilken typ av data fraktbolaget lägger fram till användaren. Utsläppsdata är inte obligatoriskt att rapportera och behöver därför inte granskas av en oberoende tredje part. Utsläppsdata producerat av fraktbolagen kan dock undantagsvis

basera sig på tal rapporterade till MRV som redan granskats av en tredje part. Dock tillåter även MRV skillnader i rapporteringen, ett exempel är utsläppsdata från passagerarfartyg. Passagerarfartyg som även tar frakt (Ro-Pax-fartyg) används inte i hög grad runtom i världen. Dessa fartyg är dock vanliga inom Östersjön. Under 2021 utfördes 90% av all import och export med hjälp av frakt. Av den här transporten stod Ro-Pax fartygen för 31% av exporten och 26% av importen till Sverige. Tilläggsvis stod passagerarfartygen för 90% av all import och export till Estland (Finnish Shopowners' association, 2022).

Det som urskiljer passagerarfartyg från övriga fartyg är deras lastutrymme. Till skillnad från andra fartyg så är passagerarfartygen planerade att ta både last och passagerare, medan övriga fartyg tar enbart fraktgods. Hur bör fartygets utsläpp allokeras mellan frakt och passagerare? Enligt europeiska standarden EN16258 kan dessa utsläpp allokeras enligt två metoder: MASSA-metoden och AREA-metoden (CLECAT, 2012). Problematiken i detta uppkommer då dessa metoder kan påvisa ojämförbar utsläppsinformation till fraktköparna, som i sin tur publicerar den här informationen i sin icke-finansiella rapport.

Den andra delen är valet av kalkylmetod hos rapporteringsbolaget. Enligt GHG-protokollets ramverk kan ett bolag kalkylera och rapportera sina utsläpp baserat på tre olika metoder. Kalkylmetoderna är Fuel-Based Method, Distance-based Method och Spend-based Method. Valet av metod bör basera sig på mängden tillgängligt data som rapporteringsbolaget innehar. Fuel-Based Method baserar sig på mängden bränsle som kan hänföras till rapporteringsbolagets frakt. Den här metoden kräver mest primärdata av alla ovannämnda metoder. Data som Fuel-Based Method innefattar är bland annat data om fartygets bränsleförbrukning, storleken på utrymmet som används för frakt samt dess transportsträckor. Distance-based Method baserar sig likaväl som Fuel-Based Method på primärdata. Den här metoden samlar primärdata från transportsträckorna men använder genomsnittsdata för att besvara en del variabler. Metoden rekommenderas om man inte kan nå specifika data från vissa delar av frakten. Spend-based Method är den sista metoden som GHG Protokollet nämner. Den här metoden bygger på genomsnittsdata som kalkyleras baserat på hur mycket medel som spenderats på frakt, för att sedan applicera miljö-utvidgade input-output-data. GHG Protokollet menar att Spend-based Method innehåller osäkerheter

kring dess trovärdighet, då dess data bygger på genomsnittliga siffror. GHG Protokollet rekommenderar att metoden används främst till screeningändamål.

Genom att bolag kan välja kalkylmetod för att redovisa sina utsläpp ökar risken för vilseledande tolkningar av företagets utsläppsrapport. Dessutom minskar även dess relevans då det nödvändigtvis inte framkommer i den icke-finansiella rapporten vilken metod som använts för att redovisa bolagets utsläpp. Tilläggsvis minskas även jämförbarheten av utsläppsrapporter mellan bolag då utsläppssiffrorna inte är standardiserade. Slutligen kan till exempel incitament att investera i grön frakt sjunka. Detta ligger i grund för att GHG Protokollet tillåter bolag att rapportera genomsnittliga utsläppssiffror från frakt, vilket leder det till att de faktiska skillnaderna mellan fraktmetoderna suddas ut.

Användningen av primärdata kontra sekundärdata kan anses som en hörnsten i rapporteringen av ett bolags utsläpp. GHG Protokollet har sagt att bolag bör föredra att i mån av möjlighet använda sig av primärdata framför sekundärdata. För att rapportera enligt Fuel-Based Method krävs det frekvent kommunikation med fraktbolaget. Detta sätter därmed press på att fraktbolaget behöver kunna förse rapporteringsbolaget med väldigt specifika utsläppsdata. Dessa data behöver även kunna förses sömlöst för att datainsamlingen inte skall bli tidskrävande för rapporteringsbolaget. Om den här typen av data blir tidskrävande samt kräver stora arbetsresurser för rapporteringsbolaget, kan det vara lockande att byta över till en metod som bygger på genomsnittliga siffror vilket motstrider GHG Protokollets mål. Utöver potentiella flaskhalsar som uppkommer i datainsamlingen, blir rapporteringsbolaget beroende av att förlita sig till fullo på att fraktbolagets data är trovärdigt och relevant.

8.3 Metod

I studien undersöks ämnet ur ett kvalitativt perspektiv. Målsättningen bakom studien är att lyfta fram flaskhalsarna i nuvarande rapportering av utsläpp, med fokus på frakt. Studien är en fallstudie som använder sig av innehållsanalys. Datainsamlingen har utförts genom en dokumentanalys samt fem intervjuer.

Avhandlingens ändamål har därmed varit att samla och analysera data genom hela utsläppskedjan. Datainsamlingen påbörjades genom en dokumentanalys. I dokumentanalysen har tio icke-finansiella rapporter från bolag analyserats. Dessa bolag är antingen noterade på Helsingfors aktiebörs eller har signifikant verksamhet i Finland. I dokumentanalysen undersöktes vilken typ av data som bolagen presenterat till sina intressenter via sin icke-finansiella rapport, samt vilka bifogade bilagor som lyft fram bolagets fraktutsläpp. Data av intresse är hur bolaget presenterar sina fraktutsläpp, vilken rapporteringsmetod som har använts samt användningen av primärdata kontra sekundärdata. Utöver dessa variabler har dokumentanalysen granskat eventuella utlåtanden av bolaget gällande osäkerheter i deras utsläppsrapporter.

I studien har det utförts fem intervjuer. Alla de intervjuade bolagen är listade på Helsingfors aktiebörs. Intervjuerna gjorde med det finländska rederiet Viking Line, bolaget Kemira Oyj samt tre bolag som önskat förbli anonyma.

Intervjun med Viking Line lyfte fram de faktiska skillnaderna mellan olika kalkyleringsmetoder av att rapportera utsläpp från sjöfarten. Dessutom lyftes det fram skillnaderna mellan användningen av primärdata och sekundärdata. Under intervjun diskuterades även problem med allokeringen av utsläpp som redan kan uppdagas i tidigt stadie hos fraktbolaget, vilket senare kan påverka rapporteringsbolagen som köper frakt.

De andra intervjuerna är riktade till bolag som köper frakt. Intervjuaren har därefter uppmanat de intervjuade att diskutera deras syn på trovärdigheten och relevansen i den frakt som de köper. Intervjuerna lyfte fram de olika processerna av datainsamlingen. Dessutom diskuterades flaskhalsar som uppkommer i insamlingen av data. De intervjuade har fått ge sin syn på den nuvarande rapporteringsstandarden given producerad av GHG Protokollet. De har fått svara hur väl standarden lyckas avspegla en trovärdig bild av bolagets utsläpp samt hur väl den fungerar i praktiken.

8.4 Empiriska resultat

Avhandlingen har använt två typer av datainsamlingar. Den första typen av datainsamling är en dokumentanalys som baseras på tio icke-finansiella rapporter. Dokumentanalysen har hjälpt till att besvara vilken typ av data som investerarna har tillgång till i sitt beslutsfattande gällande ett bolags ESG. Den andra typen av insamling bygger på fem semi-strukturerade intervjuer. En intervju utfördes med rederiet Viking Line och fyra intervjuer gjordes med bolag som använder sig av frakt i sin logistik.

Resultaten i dokumentanalysen visade att nio av de tio undersökta rapporterna använde sig av GRI-standarden, varav ett bolag dessutom använde stöd från SASB-standarden. Bland de analyserade rapporterna så rapporterade alla sina utsläpp enligt GHG-protokollet. Bland de rapporterande bolagen rapporterade nio sina utsläpp från det tredje omfånget. De stöd som nämndes för att beräkna deras fraktutsläpp var:

- Utsläppsdata från fraktbolag
- Sekundärdata samlade från VTT Lipastos databas
- EN 16258
- Kostnadsbaserad rapportering

I sin helhet presenterade bolagen begränsad mängd information till sina intressenter gällande utsläppsdata från deras tredje omfång. Dock så presenterade några bolag andelen primär- och sekundärdata använt för att beräkna deras utsläpp från det tredje omfångets kategorier. Den här informationen kunde härledas från deras lagerrapport för växthusgaser. Kvalitén och upprättandet bakom de olika utsläppsrapporterna varierade, vilket gjorde det svårt såväl som intressent att jämföra rapporter gentemot andra bolags utsläppsrapporter.

Svaren från intervjufrågorna varierade bland de intervjuade. Även alla de intervjuade rapporteringsbolagen använde sig alla fyra bolag av Distance-based Method. Bolagen sinsemellan hade olika sätt för att samla data. De två mindre bolagen försökte basera sig till fullo på variabler givna från fraktbolagen, medan de två större bolagen hade ett annorlunda tillvägagångssätt. Ett av de större bolagen försöker samla primärdata från sina största

leverantörer och använder sig av sekundärdata till sina mindre leverantörer. Det andra stora bolaget, Kemira Oyj, fokuserar på att samla data från sina hamnplatser och beräknar vissa delar av transporten med hjälp av genomsnittliga data. Det här tillvägagångssättet har gjorts i syfte att förbättra deras fraktsiffrors jämförbarhet på intern nivå. Genom att använda sig av deras datainsamlingsmetod kan de samla data i nutid och på ett konkret sätt se hur deras utsläpp skapas. Med hjälp av sin kalkylmodell har de kunnat implementera den här datainsamlingsmetoden i sin affärsmodell.

En konsensus bland de intervjuade är att nuvarande rapporteringsstandarder av utsläpp inte är felfria. Det finns osäkerheter i datainsamlingen genom hela utsläppskedjan. Med nuvarande rapporteringsstandarder kan bolag rapportera sina fraktutsläpp enligt tre metoder. På grund av detta finner jag det svårt att jämföra bolags utsläppssiffror gentemot varandra. Förbättringsförslag som de intervjuade bidrog med var bland annat striktare reglering av utsläppsrapporteringen samt högre krav på de data som fraktbolagen överlåter till rapporteringsbolagen.

8.5 Resultat och diskussion

För att tolka de data som använts i studien behöver man ha förståelse på flera plan för att inse problematiken i rapportering av fraktutsläpp. För att grunda en slutsats behöver det ses över hur bolaget samlar in utsläppsdata. Dessutom behöver det se över de risker som uppkommer med de olika datainsamlingsmetoderna. Redan från ett tidigt stadium i rapporteringen av utsläpp är kraven högt ställda på att rederier skall kunna leverera exakta data på ett objektiv sätt. Det här görs för att påvisa jämförbara tal mot konkurrenter, men samtidigt uppvisa trovärdiga utsläppssiffror. Exempelvis inom Norden, där Ro-Pax-fartyg är vanliga, påvisas det hur svårt det är att producera jämförbara tal fastän rapporteringskraven följs. Inom Ro-Pax-sektorn kan rederier välja att rapportera enligt två olika metoder, MASSA-metoden och AREA-metoden (CLECAT, 2012). Dani Lindberg, Viking Lines hållbarhetschef (2022) menar att om redare rapporterar enligt olika metoder så kommer inte talen vara jämförbara. Utöver det här är dessutom Ro-Pax-fartyg väldigt olika i strukturen så att en del fartygs

primära syfte är att ta passagerare, medan andra fokuserar nästan till fullo på frakt och deras användning av sitt fraktutrymme.

Dessutom är även vikten av att förstå användning av primärdata kontra sekundärdata grundläggande. Lindberg (2022), menar att sekundärdata inte kan avspegla verkliga utsläppsdata. Dock behöver man värdesätta hur hög relevans den här typen av data verkligen har för rapporteringsbolaget. För att primärdata skall skapa värde för bolaget behöver det bidra med trovärdiga siffror som är högt relevanta samt jämförbara. Därtill bör de även kunna användas till beslutsfattande, både på intern och extern nivå. Dessutom får det inte anses som en börda att samla den här typen av data, utan datainsamlingen måste vara effektiv från båda parter.

På basis av empirin som är samlad i den här studien finner jag det svårt att till fullo argumentera för primärdata. Primärdata i dagsläget innehåller lika väl som sekundärdata delvis osäkerheter i rapporterade data. Dels kan man argumentera utifrån exemplet som gällande Ro-Pax-fartyg där primärdata inte nödvändigtvis är direkt jämförbara. Detta exempel indikerar redan vid ett tidigt stadie att det är svårt att skapa jämförbara och rättvisande utsläppssiffror. Genom att GHG-protokollets standarder tillåter bolag att kalkylera sina utsläpp enligt tre olika metoder som bygger på olika mängder data, bidrar det till att rapporternas jämförbarhet försämras.

Bland de absolut svåraste problemen med utsläppsrapporteringen är däremot flaskhalsarna som uppkommer vid datainsamlingen. Alla de fyra intervjuade rapporteringsbolagen lyfte fram olika typer av flaskhalsar i insamlingen av utsläppsdata. Problem som lyftes fram var bland annat ojämförbara tal, oprecisa data samt osäkerheten om okunskap från rederierna. Utöver dessa problem så tog det ibland lång tid att få data från rederierna, där bolagen fick skicka påminnelser om de data som de efterlyste. Det uppmärksammades dessutom att de data som gavs varierade mellan rederierna, vilket reducerade deras jämförbarhet. Även de större bolagen uppmärksammade emellanåt att rederierna inte alltid förstod vilken typ av data som de ville komma åt.

För att motverka dessa typer av flaskhalsar bidrog Kemira med ett annat alternativ. Kemira har valt att frångå rekommendationerna givna av GHG-protokollet som uppmanar

bolag att försöka förlita sig helt på primärdata. I stället för att samla primärdata från rederierna som de andra intervjuade bolagen gör, samlar de sina primärdata direkt från hamnarna. Sedan applicerar de därefter sekundärdata som annars skulle behöva skickas av rederierna. Genom den här metoden menar de att deras utsläppsdata blir mera jämförbara på intern nivå där de har ett konkret sätt att mäta sina utsläpp. Dessutom har det även gjort sina data mera aktuella eftersom de ser varifrån deras utsläpp uppkommer och kan ges på kort varsel. Dessutom tror Jori Fabricius, Kemiras biträdande direktör för globala logistikenheten, att de utsläppsdata de producerar är mera precisa än data de skulle få direkt från leverantörerna.

Med beaktande av dessa problem finner den här studien osäkerheter i rapporteringen av utsläpp från sjöfarten. Det finns osäkerheter inom flera delar i rapporteringsprocessen. På basis av intervjusvaren tror de intervjuade att den framtida utsläppsrapporteringen kommer bli striktare. Dock är nuvarande rapporteringsstandarder väldigt resurskrävande. Jag anser att framtida standarder borde lägga större tyngd på att göra dessa standarder mera praktiska och tydliga. Beaktande av de data som samlats in i den här studien är det svårt att argumentera från ett redovisningsperspektiv för så kallad ”grön frakt”. Den här bedömningen bygger på att nuvarande rapporteringsstandarder av fraktutsläpp har låg relevans och jämförbarhet gentemot andra bolags utsläppsrapporter.

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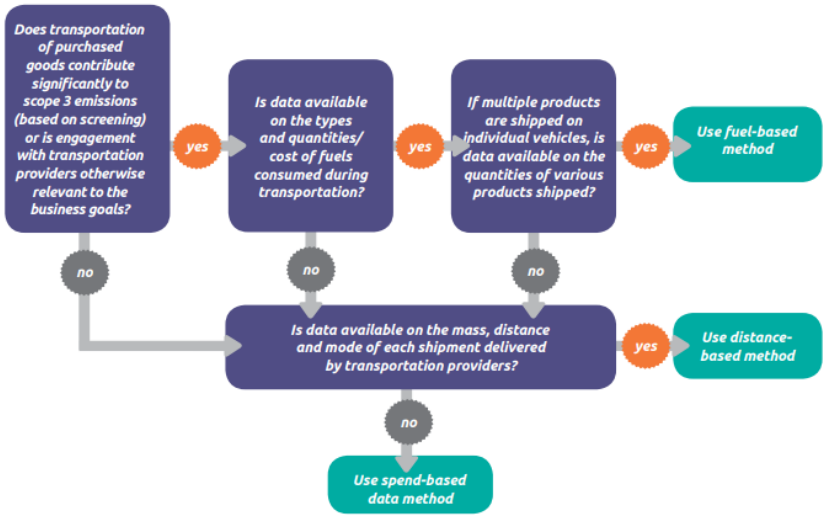
10. Appendices

Figure 1, Found in chapter 2.4 in this thesis.

Transportation and distribution activity in the value chain	*Scope and category of emissions*
Transportation and distribution in vehicles and facilities owned or controlled by the reporting company	Scope 1 (for fuel use) or scope 2 (for electricity use)
Transportation and distribution in vehicles and facilities leased by and operated by the reporting company (and not already included in scope 1 or scope 2)	Scope 3, category 8 (Upstream leased assets)
Transportation and distribution of purchased products, upstream of the reporting company's tier 1 suppliers (e.g., transportation between a company's tier 2 and tier 1 suppliers)	Scope 3, category 1 (Purchased goods and services), since emissions from transportation are already included in the cradle-to-gate emissions of purchased products. These emissions are not required to be reported separately from category 1.
Production of vehicles (e.g., ships, trucks, planes) purchased or acquired by the reporting company	Account for the upstream (i.e., cradle-to-gate) emissions associated with manufacturing vehicles in Scope 3, category 2 (Capital goods)
Transportation of fuels and energy consumed by the reporting company	Scope 3, category 3 (Fuel- and energy-related emissions not included in scope 1 or scope 2)
Transportation and distribution of products purchased by the reporting company, between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company)	Scope 3, category 4 (Upstream transportation and distribution)
Transportation and distribution services purchased by the reporting company in the reporting year (either directly or through an intermediary), including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company)	Scope 3, category 4, (Upstream transportation and distribution)
Transportation and distribution of products sold by the reporting company between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company)	Scope 3, category 9 (Downstream transportation and distribution)

GHG-Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard GHG-Protocol Table 5.7 Accounting for emissions from transportation and distribution activities in the value chain

Figure 2, Found in chapter 3, "All eyes on emission reporting"



GHG Protocol Category 4, Figure 4.1 Decision tree - GHG-Protocol Category

Body for the interview

My master's thesis aims to understand what information is being used to report emissions coming from freight. It wants to sort out the reliability behind the information used, whether the purchaser of the freight does believe that the information reflects a fair image using reporting standards, and sort out if any changes could be made to improve the reporting. (Add comparability and mention this is based on GHG protocols reporting standards and this is a semi-structured interview)

- In regards to your business, do freight emissions stand for a substantial part of your overall emissions outlet and are considered a great part of your business?

- Is Scope 3 considered a part of your goal to reduce emissions, or do you consider it something hard to affect on your part, more precisely shipping emissions?
    - What type of ships are you using (E.g., Ro-Ro, Ro-Pax, Bulk, container, and so on…)
    - Have you hired the shipping companies directly (First-tier supplier) or hired a logistics firm for the logistics (Second-tier supplier)
        - Are you sharing the vessel with any other companies, or are you chartering the entire vessel?

- According to which method are reporting your freight emissions from categories 4 and 9, Fuel-Based, Distance-based, or Spend-based method? (Or are you using a mix of these methods?)
    - What are your dialogues with the shipping companies, can you obtain emission information with a low threshold, or is this something that can be seen as hard?
        - In case you do not have contact with them, what is the reason behind it?
        - In case you have with the shipping company/companies, do you consider the information you receive to be capricious and reliable, or do you have any takes on how it could be improved?

            - If possible, what type of information do you receive, and eventually what information do you lack?
        - Are there uncertainties around the information you receive regarding its credibility, e.g., Inaccurate/misleading allocations?

- Do you consider there are any improvement aspects regarding emission allocation, more precisely scope 3 reporting?
    - E.g., stricter/looser regulations regarding the reporting?
        - More comparable against competitors?
    - Requirement of third-party to verify the data like an authority
    - If using a less credible reporting method (Spend-based method) do you believe it could mirror a misleading picture compared to a method that requires more primary data?
        - Should there be clearer notes like in the financial reporting which state which methods have been used to conduct the emission report?

- What are your thoughts on future non-financial reporting, in what way do you believe we are heading?
- The word is yours?

The interviewee has the right to be anonymous and has the right to stop the interview whenever he or she wishes.