MASTER'S THESIS

Challenges of the environmental aspects of CSR

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Abstract:

This project examines the complex issues businesses encounter when addressing the environmental aspects of corporate sustainability reporting in Denmark. The project elucidates difficulties involved in establishing environmental indicators and various qualitative and quantitative facets of environmental data. Managing external pressures and meeting the information needs of stakeholders while navigating the ever-changing regulatory and commercial landscapes also present a significant obstacle. Additionally, the need for developing a culture of continuous organizational learning, creating new organizational routines, and training staff on reporting principles is highlighted as well. The compounding factors of securing managerial commitment and navigating through uncertainties add layers of complexity to these challenges. Ultimately, the project shows that companies must allocate resources, utilize digital solutions, and foster efficient communication and knowledge sharing to effectively address these complex issues.

CONTENTS

1 INTRODUCTION

In 2020, all 27 member states of the European Union pledged their commitment to reducing CO2 emissions by 55% by 2030, which would put the EU on the path of becoming the first climate neutral continent by 2050. The blueprint for this revolutionary change is set out in the European Green Deal, which proposes the following actions to achieve the ambitious goals:

- *"Making transport sustainable for all;*
- *Leading the third industrial revolution;*
- *Cleaning our energy system;*
- *Renovating buildings for greener lifestyles;*
- *Working with nature to protect our planet and health;*
- *Boosting global climate action"* (European Commission, 2021)

The aim of this strategy is to create a prosperous and fairer society with a resource-efficient and competitive economy. In relation to industry, the Green Deal focuses specifically on harnessing low-emission technologies and sustainable products and services and supporting the full mobilisation of industry to include all industrial value chains (European Commission, 2020). Shortly after the approval of the Green Deal, the European Commission also formulated and accepted a proposal for updating the existing Non-financial reporting directive (NFRD) in order to match this new development strategy and, hence, the Corporate sustainability reporting directive (CSRD) was adopted in November 2022. As a consequence of the CSRD, companies will need to elaborate on their sustainability strategies to cover issues such as "environmental matters – including science-based targets, EU Taxonomy and climate risk-related reporting, social matters and treatment of employees, respect for human rights, anti-corruption and bribery, and diversity on company boards" (Crabbendam, 2022). The CSRD also mandates independent assurance of their reports in accordance with sustainability reporting guidelines to ensure that information is accurate and trustworthy, and businesses are required to publish their sustainability data in a certain area of their corporate management reports. The legislation is expected to impact 50 000 companies, or nearly three quarters of business in the EEA (Crabbendam, 2022).

This new legislation aims to create more transparency surrounding companies' activities and sustainability efforts as well as streamline reporting procedures and enhance credibility and comparability in the market, thereby providing sufficient information to both investors and stakeholders on sustainability-related risks. This in turn should help move investments into more sustainable projects and businesses and encourage companies to have a more tangible and profound contribution to climate neutrality, thus contributing to the vision of the Green Deal (Crabbendam, 2022).

However, while it is widely accepted that companies should be assessed on the basis of both financial results and generated impact on society and the environment (Manes-Rossi, et al., 2018) (Micco, et al., 2020), sustainability reporting does involve some significant challenges for companies, especially when it is a requirement mandated by public authorities. A paper by Baret & Helfrich (2018) elaborates on different sets of

challenges for companies, which include issues pertaining to the complexity of sustainability reporting; its scalability, reliability and standardization; the extent of accountability of different stakeholders; and conciliating legislator's expectations with the companies' specificities, among others. A particularly complex challenge is the collection of credible information on the environmental impact of companies and transforming it into hard data (Jain & Tripathi, 2022) as well as understanding and evaluating the risks of climate change for businesses in the long run. That is because environmental impacts are not contained within the borders of the organisation, they are not an easily observable local problem, but are scattered across the entire value chain, and occur within numerous networks for resource distribution (energy, water, raw materials, etc.). Furthermore, not only are there many diverse challenges to environmental sustainability reporting but those challenges also differ across national and industry specific contexts (Jain & Tripathi, 2022). Hence, there is no easy way to classify and generalise such challenges.

Therefore, I will delve into the idiosyncrasies of a specific case study set in the distinct context of Denmark through the following problem formulation:

What challenges do companies in Denmark face when tackling the environmental aspects of corporate sustainability reporting?

To unravel the complex web of information contained within this problem, I will work with the case of Alfa Laval and their environmental reporting practices, which in turn will serve as the basis to examine what exactly are some of these intricate challenges. My data collection will also be supplemented by an interview with a course provider. The following sub-questions have further directed my research:

- What is corporate sustainability and why has it become so prominent in recent years?
- What are the inherent characteristics of environmental reports and how do those affect the reporting journey of companies?
- What are the benefits of using the case study method for this project and what choices have been made in relation to that?
- What kind of resources does environmental reporting take up in a company?
- What types of reporting standards and tools are available to companies and is their use sufficient and straightforward?
- How do companies go about acquiring the necessary information and assistance?

2 CONTEXT OF THE PROBLEM

To set the stage for a broader and more inclusive conceptualization of sustainability, the following chapter will firstly link together notions emerging from the "mobilities turn" together with issues pertaining to the corporate world. Then, I create an overview of how corporate sustainability [CS] is defined in different academic works, take a critical look at some of these understandings of CS, and elaborate on the distinct outlook of CS that will be used in this paper. Lastly, in order to clarify what kind of purposes environmental

reporting serves, I look at how and why environmental reporting as part of sustainability reporting emerged, and what impact it has on companies.

2.1 MOBILITY OF RESOURCES AND POLLUTERS ON THE MOVE

The world is shaped by rapid societal, economic and environmental developments that are being brought about by technological innovations, which permeate and transform every aspect of modern-day life. Electrical vehicles are quietly starting to take over the streets with the intent of creating cleaner cities; artificial intelligence is making a monumental leap and is impacting the way we think about learning and consciousness; social media and other virtual channels are fundamentally changing the way we create and sustain personal and professional relationships; and e-commerce is starting to make physical stores obsolete as people are shifting to conducting their sales and purchases online. And the list goes on.

Many of these developments are connected to issues of mobility and connectivity. The "mobilities paradigm" ascertains not only the emergence of these many novel kinds of mobility (Urry & Sheller, 2006), but also confirms that the speed and intensity of various flows are greater than ever before (Pooley, et al., 2006) and have a greater impact on a global level. These movements of people, goods, services, technologies, knowledge, capital, and dangers (e.g. viruses) constitute a so-called 'liquid modernity' (Bauman, 2000), and exert great power that is often beyond the control of nation states and local authorities. Hence, the "mobilities paradigm" redirects research from static structures and entities, calls into question scalar logics and understandings of local and global, and "emphasises that all places are tied into networks of connections" that stretch beyond space and time (Urry & Sheller, 2006).

Therefore, I consider the mobilities field and the problematics it deals with to be the context background upon which the quest for sustainable development unfolds. This is because the "mobilities turn" lends some key concepts to the research problem, such as a more nuanced understanding of place that goes beyond the sedentarist perspective of entities as "homogenous, self-enclosed and contiguous blocks of territory" and instead adopts the understanding of companies as a "complex, tangled mosaic of superimposed and interpenetrating nodes, levels, scales, and morphologies" (Brenner, Citation2004, p.66). By expanding the imaginary borders of a business to include the diverse interactions taking place with suppliers, carriers, end consumers, local communities, surrounding environment, etc., then it becomes easier to perceive the actual impact of a business model and thereafter, conceive meaningful transformative actions that can contribute to corporate sustainability. This helps avoid the risk of focalisation and getting trapped into one set of environmental reporting goals and enables a more holistic approach to sustainability with better overview.

As companies are the heart of this project, I will take a closer look at how the mobilities paradigm can help understand the embeddedness of businesses into various networks and how that relates to their sustainability agenda.

Companies make use of many different kinds of raw materials and components that are often sourced through air or ship freight from around the globe due to either, for example, higher availability somewhere else or more competitive pricing. They also have a high demand for electricity delivered through power grids as well as possibly using large quantities of other natural resources such as water, land and sun energy. Businesses today also have the possibility of much broader reach and an enlarged consumer base due to many companies expanding their operations in multiple countries, online commerce and the possibility of conducting business entirely on the internet, and also a "*cosmopolitanization of taste that puts all kinds of consumer commodities and 'travelling objects' into motion"* (Lury, 1997).

Furthermore, the rise in cross-border transactions as well as the capability of companies to have enormous geographical dispersal and mobility goes hand in hand with 'pronounced territorial concentrations of resources necessary for the management and servicing of that dispersal and mobility' (Sassen, 2002). However, this territorial "concentration of resources can create zones of connectivity, centrality, and empowerment in some cases, and of disconnection, social exclusion, and inaudibility in other cases" (Graham & Marvin, 2001). This means that in certain locations companies can create zones of connectivity and empowerment through, for example, the establishment of large factories that employ thousands of workers. This can have spillover effects in the local urban area by prompting the creation of new infrastructure; increasing people's purchasing power through provision of labour, which in turn could lead to growth in new local businesses; and overall growth of the size of the population, which could result in urban sprawl. On the other hand, the same large factories might pull away work force from smaller settlements and towns nearby as people choose to commute larger distances to find better employment opportunities or simply move away, which can lead to depopulation of less economically developed areas, the dying out of smaller local businesses and an overall decrease in provision of services and quality of life in those places.

Furthermore, businesses also significantly influence travel and relocation patterns. Companies today often actively seek out and attract international talent and accommodate their move with their families from across the globe. At the same time, they also send out their employees to other cities and countries for business meetings or projects that can span from one day to a whole year. What is more, a very large percentage of daily trips are made by people commuting to work. Case in point, according to a National Travel Survey in Sweden in 2001 "commuting to work and business travel are the most dominant trip generators" in the country (Robert, 2007). Therefore, the total number of journeys made in relation to work and business travel account for a large percentage of overall travel and its consequences should not be underestimated.

Lastly, companies employ a substantial arsenal of digital tools and technologies, and we can see an even higher degree of incorporation of such solutions after the effects on the Covid-19 pandemic. Virtual meetings and remote working are becoming increasingly common-place and constitute a form of virtual mobility that not only enables the creation of new work lifestyles but also has the potential to reduce emissions from unnecessary trips.

All of these different activities that companies engage in have a profound effect on the surrounding natural and social environments: greenhouse gasses are produced and released into the atmosphere, contaminants leek into and pollute water sources, raw material availability is reduced, waste is accumulated at both production and consumer levels and is often discarded into large landfills, nature areas are being replaced by steel and concrete facilities, and many more. As businesses are 'on the move', so are the pollutants and detrimental effects that come along with some of their activities.

Therefore, it is reasonable to assert that the research question originates within the mobilities framework. When we consider the mobilities field to be concerned with the movement of people, goods, services, technologies, knowledge, capital, and the materialities and practices that facilitate such flows, it becomes evident this also includes the ongoing growth and evolution of the underlying processes and structures. Hence, in light of the pressing issue of climate change, sustainability should be tightly incorporated in the mobilities field and should be an underlying design principle of any kind of development. However, translating sustainability concepts and values into practical actions is difficult. Moreover, the responsibility for addressing these issues extends beyond individual actors and requires a re-evaluation of systems and supply chains. A prerequisite for this to happen is for companies to improve their corporate sustainability reporting by learning how to better monitor and systemise knowledge about their effect on the environment in order to understand where they can have the most impact and to follow up on progress achieved by the new solutions they apply.

2.2 THE AMBIGUITY OF CORPORATE SUSTAINABILITY

Discerning between the different notions of corporate sustainability is important as it lays out the evolution of the concept of sustainable development, introduces existing discourses and challenges surrounding the term and sets the stage for the theoretical framework that will be used. Defining the term will also have an influence on how a research project is carried out, what parameters it will include and what kind of findings and implications it will have (Meuer, et al., 2020).

There is a multiplicity of definitions when it comes to corporate sustainability. The International Institute for Sustainable Development (1992) defines corporate sustainability as 'adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future', which seems to be closely derived from the broader definition of sustainable development provided in the Brundtland Report (1987).[1] However, the Brundlandt definition has been widely criticised over the years for being 'un-operationalizable' (Siew, 2015) and 'vague' (Wallner, 1999), and therefore the same critique can be surmised for the IISD definition.

Another definition proposed by Szekely and Knirsch (2005) defines CS as 'sustaining and expanding economic growth, shareholder value, prestige, corporate reputation, customer

[1] 'Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs'. (United Nations, 1987)

relationships, and the quality of products and services. It also means adopting and pursuing ethical business practices, creating sustainable jobs, building value for all corporation's stakeholders and attending to the needs of the underserved'. Similarly, Neubaum and Zahra (2006) describe CS as 'the ability of a firm to nurture and support growth over time by effectively meeting the expectations of diverse stakeholders. However, both these definitions seem to have more focus on the social perspective and less focus on the actual environmental impacts that business activity has on the external environment, and they deal with how the company's sustainability is viewed and perceived by different stakeholders, instead of actual and measurable environmental impacts.

Other definitions expand upon these concepts of corporate sustainability by recognising that the boundaries of organisations are permeable and that companies should be accountable for the behaviour of businesses down their value chain and understand their place in the wider network of actors across the business landscape (Aras & Crowther, 2009). For example, Hart and Milstein suggest that a sustainable enterprise is one that 'contributes to sustainable development by delivering simultaneously economic, social, and environmental benefits. Sustainable development is the process of achieving human development in an inclusive, connected, equitable, prudent and secure manner' (2003, p. 56). Following this line of thought, it can be noted that while many scholars use CSR and corporate citizenship interchangeably with CS, the latter has come to encompass a broader understanding. Namely that, even though, corporate sustainability is closely linked to the former two terms and includes largely the same kinds of activities, CS is used to highlight the 'embeddedness of firms in larger systems, and their roles in stabilizing or eroding these systems' (Bansal & Song, 2017). The research on corporate sustainability, therefore, originates from a different perspective, namely that enterprises contribute to outcomes at the level of the systems in which they are nested, even though corporate sustainability and CSR frequently refer to the same concrete behaviours (Meuer, et al., 2020).

As shown in the above-mentioned definitions, CS is an umbrella term with an array of meanings, interpretations, and values falling under its scope. Furthermore, not only is the definition of CS ambiguous, but some scholars go as far as saying that the term corporate sustainability can obfuscate the reality surrounding the activities of a corporation. For instance, Aras and Crowther argue that using the term sustainable development in a corporate setting can be misleading and can have the effect of obscuring the true ramifications of corporate activity and growth on the environment (2009). They further elaborate that 'it is noticeable that extractive industries – which by their very nature cannot be sustainable in the long term – make sustainability a very prominent issue', however, a quick analysis of sustainability claims put forth by such companies reveals a degree of uncertainty regarding what is meant by this sustainability, and often means little more 'than that the corporation will continue to exist in the future' (Aras & Crowther, 2009). Regardless, CS is a widely used term, applied both in the business world and academia, and it has come to encompass the broader and more long-term ambitions of businesses and signals a change in the way both companies and stakeholders prioritise different factors for value creation.

Aras and Crowther have made a comprehensive model (figure 1) to explain the different dimensions of corporate sustainability, which are:

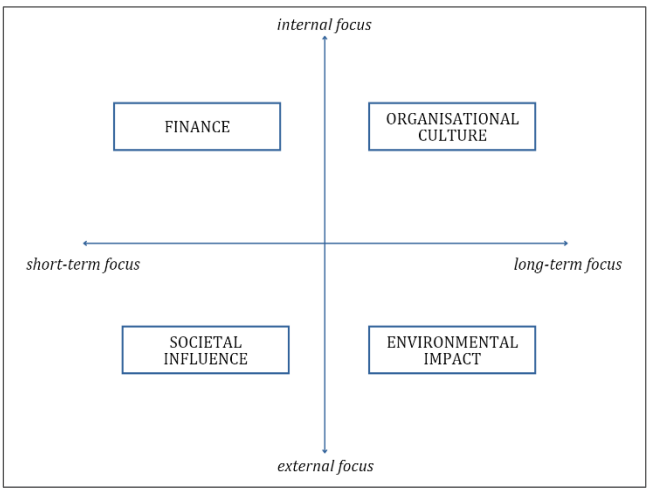


Figure 1 Model of Corporate Sustainability

"• *Societal influence, which we define as a measure of the impact that society makes upon the corporation in terms of the social contract and stakeholder influence;*

• *Environmental impact, which we define as the effect of the actions of the corporation upon its geophysical environment;*

• *Organisational culture, which we define as the relationship between the corporation and its internal stakeholders, particularly employees;*

• *Finance, which we define in terms of an adequate return for the level of risk undertaken*" (Aras & Crowther, 2009)

This breakdown of CS is viewed by the author of this paper to be the one that is best suited to the purposes of this research as it provides the most appropriate level of detail and holistic thinking. Based on the above understanding, in relation to this project's focus, I would argue for a reformulation of CS as follows: corporate sustainability is a framework of actions and the underlying values for corporate initiatives that aim to contribute to reducing the negative effects of the company on the environment and delivering lasting positive ones, maintaining good relationships with both internal and external stakeholders, while also sustaining an adequate financial return on investment. The argument for defining corporate sustainability as a framework rather than simply as a set of activities, is because the underlying values and assumption for carrying out the chosen course of action is just as important as the actions themselves.

It is clear that all four dimensions are vital for corporate sustainability. However, as mentioned in the introduction, this project's focus is on the environmental dimension of sustainability. The argument for that is not a reflection of its greater importance but stems from its comparatively less developed, more challenging-to-define, and increasingly prominent nature within the sustainability discourse.

2.3 SUSTAINABILITY REPORTING - HISTORY, PURPOSE AND IMPACT

Despite the variety of definitions, there is a consensus that corporate sustainability should be measurable, to be able to assess how well a firm is doing with respect to sustainability (Özdemir, et al., 2011), and measuring and documenting corporate sustainability is done through sustainability reporting.

There are numerous different rationales aiming to explain why sustainability reporting exists (Herzig & Schaltegger, 2011). A study conducted by Spence and Gray in the UK,

observed that there are different pressures and benefits for social and environmental reporting, among which are business efficiency, stakeholder management, reputation and risk management, mimetic motivations, market drivers and internal champions (Spence & Gray, 2007). Reporting non-financial business activities can help maintain better relationships with stakeholders by demonstrating a desire to talk about and address societal and environmental challenges, thereby establishing the company's legitimacy as a positive market player and contributing to stronger brand value (Herzig & Schaltegger, 2011). This enhanced corporate reputation can potentially result in both enhanced financial performance (Siew, et al., 2013) as well as non-financial gains, such as better relationships with suppliers, traders, and public authorities, which creates less friction for business operations (Herzig & Schaltegger, 2011).

Furthermore, companies may utilize internal sustainability benchmarking methods and tools to compare business units, production sites, etc. in addition to outward benchmarking with competitors. Sustainability reporting can also instigate organisational change as it can bring attention to areas of the business model in need of improvement, inform better managerial decision making, and strengthen employee awareness and motivation (Herzig & Schaltegger, 2011). In this sense, sustainability reporting is seen and applied as a critically reflexive and learning process, where existing rules, strategies and norms are challenged and improved (Gond & Herrbach, 2006).

A brief look at the historical development of non-financial reporting shows that it first took place in Western countries in the 1970s, where financial reporting was sometimes supplemented with social reports (Hahn & Kühnen, 2013). Later on, in the 1980s, the focus turned towards the corporation's adherence to environmental management, without relating it to business performance. In the 1990s, there was a paradigm shift toward reporting on community-based activities and occupational health and safety (OHS), and shortly after, the triple bottom line concept was institutionalized, where performance is measured across the three main pillars of sustainability – economy, social, and environment (Siew, 2015).

Around this time, in 1997, one of the most widely recognised sustainability reporting frameworks, the Global Reporting Initiative (GRI), was founded by the Coalition for Environmentally Responsible Economies (CERES). Typically, a report produced according to the GRI guidelines contains the following information: vision and strategy; corporation profile; governance structure and management systems; GRI content index; performance criteria (economic, social and environmental) (Siew, 2015). A number of other frameworks have also been released over the years to support sustainability reporting, such as the SIGMA project, DPSIR framework, the Global Compact by the UN, the Carbon Disclosure Project, and the Greenhouse Gas Protocol to name a few (Siew, 2015).

Today, sustainability reporting is increasingly becoming standard practice among the largest companies in the world. According to a report produced by KPMG, who reviewed sustainability reports from 5,200 companies around the globe, 80% of the surveyed companies currently report on sustainability indicators (KPMG, 2020).

I have already mentioned the merits of sustainability reporting, but it is also important to indicate if there are any negative sides effects as well. The literature suggests that there might be some negative correlations between disclosure on various indicators of sustainability and financial performance in the short term (Aggarwal, 2013), and others propose that it might contribute to unwanted influence and pressures on the organization from external stakeholders and could "impose legal implications upon the shortcomings in sustainability reports" (Guruge, 2020). Nonetheless, these negative effects could be deemed negligible as the "majority of studies suggest that sustainability reporting enhances corporate reputation and financial performance as it results in various synergies and benefits accruing to the reporting firm" (Aggarwal, 2013).

3 THEORETICAL BACKGROUND

3.1 STATE OF THE ART REVIEW

This chapter reviews existing body of literature pertaining to the complexities of corporate sustainability reporting and what approaches, themes, and issues have been explored by previous academic work. I have chosen to recount two papers that bear the strongest resemblance to this project and discuss their contributions.

Micco et al. (2020) have published a paper called *"The challenges of sustainability reporting and their management",* where they looked at the Italian multiutility company Estra and analysed the mechanisms put in place to tackle sustainability reporting challenges and their effects. The authors developed a five-year longitudinal study spanning from 2014 till 2019, with the aim of documenting and understanding the sustainability reporting journey of the company and how it changed overtime due to internal and external factors. Using the holistic theoretical lens of Baret and Helfrich (2018), the study pinpoints to the multiple challenges related to the different sets of constraints and shows they tend to evolve overtime with different intensities, as a natural response to developments in regulations, company's expertise and expectations, etc. Furthermore, the authors examined solutions that Estra implemented, and they found that "*dissemination of sustainability principles, employees' involvement, routinization and institutionalization of SR practices and management commitment"* were most beneficial, while data management and stakeholder engagement proved to be less helpful (Micco, et al., 2020).

In a different paper, written by McNally et al. (McNally, et al., 2017), an integrated thinking framework was applied, emphasizing the interconnectedness of sustainability performance, proactive sustainability management, and integrated reporting. The authors conducted interviews with 26 preparers at 9 organisations located in South Africa, discussing the difficulties they encountered when making a sustainability report. The paper concluded that integrated reporting is not consistently seen as an inherent part of the business operations. Additionally, the new reporting format hindered the development of proper management control systems and created a constrained environment, where stakeholder engagement is almost non-existent, there is a lack of

compatibility between different systems and data, and the value of sustainability reports is questioned by the preparers (McNally, et al., 2017).

These insights from existing literature not only underscore the complexities surrounding corporate sustainability reporting but also provide useful lessons and set the stage for this research, which aims to contribute to a deeper understanding of these challenges within the environmental dimension of sustainability reporting. The first paper has also inspired the choice of theory for this research, which will be presented in the following chapter.

3.2 THEORETICAL FRAMEWORK: THE "TRILEMMA" OF SUSTAINABILITY REPORTING

The theoretical framework I have chosen to work with is the one presented by Baret and Helfrich (2018), who advocate for integrating multiple theoretical viewpoints to describe the variety of difficulties a company may encounter, when embarking on their sustainability reporting journey. The reason for selecting this particular theory is because it steers away from reductionist methodologies and adopts a more holistic perspective, acknowledging that the whole is more than a mere aggregation of its parts. Consequently, the authors of the paper illustrate that the challenges associated with the adoption of sustainability reporting arise from the fact that the implementation of reporting is positioned at the convergence of various conflicting constraints (Baret & Helfrich, 2018). The following three sets of constraints are identified:

- **Complexity and irreducibility of CSR**

The first set of challenges are linked to the very nature of CSR. First of all, CSR is inherently complex as it involves a large and diverse set of stakeholders, who continuously interact in multiple different ways, which creates a "complex socio-cognitive network" (Ancori, 2008). Furthermore, the characteristics that define CSR, also fundamentally impact the reporting process itself and make it impossible to simplify sustainability reporting to a purely quantitative approach (Baret & Helfrich, 2018). That is because there are essential elements to the reporting process that can only be presented in a qualitative manner - such as statement of the company's values, the company vision, and others, or there are certain elements that "the company doesn't know, can't or doesn't want to quantify, such as the externalities or global performance" (Baret & Helfrich, 2018).

- **Inherent stakes of non-financial reporting**

The second set of challenges arises from the different kinds of obligations that companies must fulfil. Firstly, there is a need for accountability to the stakeholders of a company, which emerges from the principal-agent theory. In other words, agents (companies/managers) are held accountable by principals (shareholders and stakeholders) through their responsibility of providing reliable information about the company's operations, thereby reducing the information asymmetry. Legislative works such as the NFRD and CSRD aim exactly at reducing this asymmetry by requiring listed companies to "report on their activities on a social and environmental level, in order for the stakeholders to be informed about the proven or potential impacts of the company

activity on well-being in the short and longer term" (Baret & Helfrich, 2018). Despite some existing guidelines and legislation, providing reliable sustainability data is still a major challenge and the authors argue that this is due to lack of coordination between participants as well as the slow pace of formation of local conventions, which predates the stabilisation of a more global convention and standardisation. In addition, sustainability reporting is still on a quest of consolidating its legitimacy, which has to be achieved by introducing better structure and more robust tools for data collection and verification.

- **Company expectations**

The third set of difficulties arise internally, from the company's own expectations toward the reporting process and its purpose. Firstly, it is expected that "beyond its efficiency—the ability of the reporting to comply with regulatory and technical requirements—the process must have an impact on the organisational dynamics and collective action" (Grimand, 2012) and therefore, contribute to organisational learning. And secondly, sustainability reporting needs to be integrated into the company routines and stabilized as a practice, while also retaining a level of flexibility in order to adapt to the changing internal and external context, which is constantly evolving due to advances in scientific knowledge and developments in regulations.

Baret and Helfrich (2018) argue that often times companies opt to focus on only one of these stakes of reporting (reducing information asymmetry, refining data collection and verification, implementing organisational change, etc.). This hyper focusing on one item of the sustainability agenda lacks general overview and can lead to the company getting trapped in one of three kinds of pitfalls:

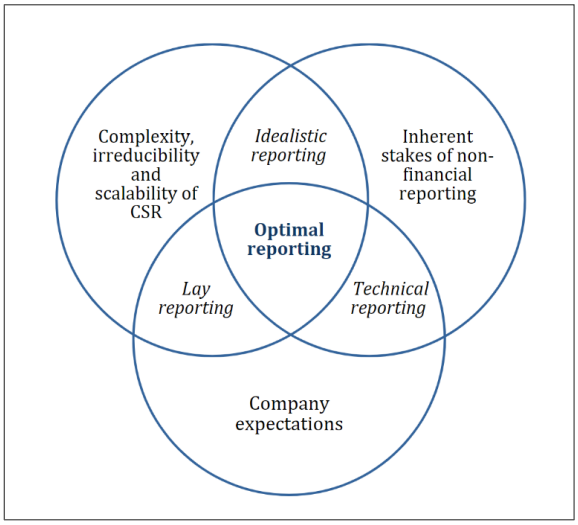


Figure 2 The Optimal Reporting

- Idealistic – When the company attempts to incorporate the scalability, complexity and quantitative aspect of sustainability reporting, while simultaneously building trust with its stakeholders and fulfilling its obligations, but, does not create an opportunity for organisational learning. In this case the process of reporting is entrusted to a group of individuals within the company (steering company or sustainability department), who apply pressure to other divisions to comply with reporting duties without engaging them in deep learning and co-construction.

- Lay – This strategy diffuses the values and responsibilities of sustainability reporting to all employees but does not adhere to conventions and frameworks and, thus, runs the risk of underperforming in relation to ensuring the legitimacy

and reliability of its data, which could unintentionally lead to a kind of greenwashing.

- Technical – While the company might be closely following requirements such as those indicated in EU directives and support the creation of good organisational routines, it does not take into account the scalable characteristics, evolving context, and qualitative dimensions of sustainability reporting.

The pursuit of all three of these categories concurrently creates a "trilemma" and by recognizing this "trilemma", companies have the opportunity to chart a course towards the optimal reporting. This acknowledgment of complexity and interplay serves as a foundation for understanding and addressing the multifaceted challenges in environmental corporate sustainability reporting.

4 THEORY OF SCIENCE AND RESEARCH METHODOLOGY

As the aim of this paper is to investigate the challenges that companies in Denmark face, when tackling the environmental aspects of sustainability reporting, I opted for a qualitative approach. The argument for choosing a qualitative approach is that it enables the collection of rich, context-dependent data that can provide a comprehensive and insightful perspective on the issues at hand. In the following chapter I will explain how I apply the interpretative tradition of hermeneutics to understand the interview data and interpret the context in which it emerged. Furthermore, I will expound on the research design and argument the different choices I have made in relation to it.

4.1 HERMENEUTICS AND THE INTERPRETIVE TRADITION

The key resources used for my data collection are texts generated by interviews, research papers and journal articles, and organisational reports. Therefore, since the project is founded on a qualitative approach and ventures to analyse and interpret collected texts, I chose to work with hermeneutics as my theory of science.

Hermeneutics concerns itself with the process of meaning-making and scholars argue that as a practice it has possibly existed since the creation of language itself. Hermeneutics was originally built upon different cultural traditions such as the interpretation of religious texts, the understanding of classical literary works and authors' intentions, and the interpretation and application of law, to name a few (Schmidt, 2006). It is thought that the first one to bring together these different discipline-specific hermeneutic theories into a universal form of hermeneutics was Friedrich Schleiermacher. Hermeneutics was then further developed and elaborated on by other authors such as Dilthey, Heidegger, and Gadamer. The later one is primarily responsible for our thinking about hermeneutics today. For Gadamer, hermeneutics is the philosophical theory of knowledge, and he claims all cases of understanding involve both interpretation and application of knowledge (Schmidt, 2006). Gadamer names the fore-structure of understanding 'prejudices', which are the presuppositions we hold and, which we have inherited from our tradition (Boerboom, 2017). Furthermore, an

important assumption of hermeneutics is that knowledge is culturally and historically embedded, meaning that in order to understand what is being articulated we must understand the historical context in which it was created and also what cultural traditions have shaped the concepts and notions contained therein (Boerboom, 2017).

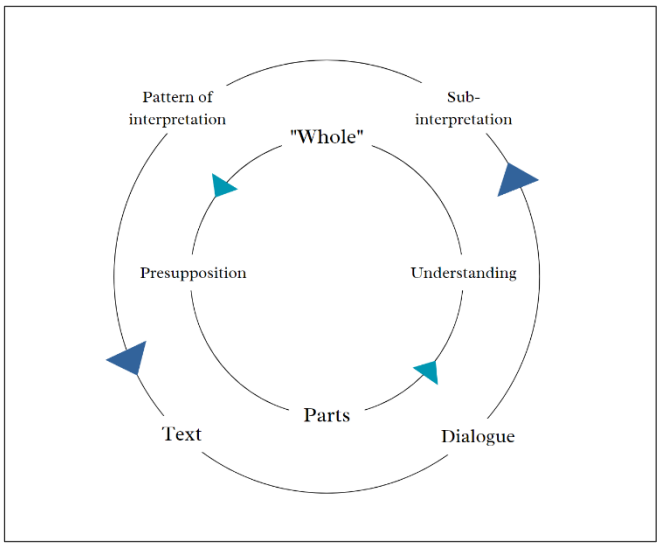


Figure 3 The hermeneutic circle basic version
Source: Alvesson and Sköldberg, 2008, p. 66

A fundamental part of hermeneutical theory is the idea of the hermeneutic circle (figure 3). According to the hermeneutic circle, '*we can only understand the parts of a text, or any body of meaning, out of a general idea of its whole, yet we can only gain this understanding of the whole by understanding its parts*' (Grondin, 2015). The premise behind the hermeneutic circle is that by viewing learning as a circular process as opposed to a linear one, we are better able to consider starting anticipations, expectations and questions, include analysis of various sources, and adjust and adapt our understanding over time.

This philosophy for interpretation and understanding of written and verbal texts has been applied throughout my thesis. To begin with, I have applied the hermeneutic tradition in chapter 2, where I have detailed some pre-existing assumptions on the themes relevant for this project, the context from which they have emerged, and discussed different interpretations of corporate sustainability and proposed a definition of CS grounded in existing research coupled with my understanding of the present-day context.

Furthermore, my research design divides the problem of corporate sustainability reporting challenges in Denmark into two perspectives: the knowledge institution and the company perspective. These stand for different formulations and perceptions of the same problem and by understanding both I have a better grasp of the whole, but also by being aware of the multi-faceted nature of corporate sustainability reporting and drawing on interpretations from the different actors, I am better able to comprehend each perspective on its own. Each interview expanded my knowledge of the research issue, and I obtained valuable insights from the different informants. Hence, after every interview, I modified my strategy by incorporating the newly learned context and as needed, reformulated my questions for each subsequent interviewee. By doing so, I have been able to examine various themes and elements, as well as discover overlapping expert arguments and points of view that eventually served as the foundation for the analysis and discussion.

In addition, I have used the hermeneutic philosophy to look beyond the surface features of the research subject and to analyse the texts generated from my qualitative data

collection. Hermeneutics allows us to take into account the description and comprehension of a problem through complex textual accounts as well as through the relationships between author, reader and text (Sebhatu, 2010). When analysing the interviews, for example, I first read through the whole text, then I re-read specific chapters to identify meaningful pieces of information, and then again, I read through the whole text to ensure the generated themes and categories corresponded with the meaning intended by the interviewees.

The next chapter will present the rationale for the methods and research design and how they aligns with the research objectives.

4.2 RESEARCH DESIGN

The context-specific nature of the research problem dictated the necessity to select qualitative research methods. Therefore, the case study method was employed by working with the national context of Denmark and taking a closer look at a specific company – Alfa Laval. The data collection was further supplemented with an interview with a knowledge provider – act2learn- who bring in a different angle and perspective to create a richer understanding.

4.2.1 Case study: "the power of example"

The argument for working with the case study as the main component of my research design is that it is "an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources" (Baxter & Jack, 2008, p. 544). As such, the case study enables researchers to explore a given problem through multiple lenses and to discover and understand different facets of the studied phenomenon (Baxter & Jack, 2008). The use of many data sources is of high importance in case studies as it promotes a more robust and credible research, upon which we can make more reliable conclusions. Without this being an exhaustive list, examples of such data sources can be: "documentation, archival records, interviews, physical artifacts, direct observations, and participant-observation" (Baxter & Jack, 2008, p. 554).

The advantages of using the case study as an approach are its immediate proximity to real-life situations and the possibility to obtain rich detail, from which a more nuanced understating of reality emerges (Flyvbjerg, 2001). As a strong proponent for the case study approach, Bent Flyvbjerg (2001) argues that context-dependent knowledge can be just as valuable as the search for predictive universal theories and that "it is more important to clarify the deeper causes behind a given problem and its consequences than to describe the symptoms of the problem and how they occur" (Flyvbjerg, 2001), especially in relation to the applicability of a study's outcome on governance, management and decision-making practices.

One of the common challenges of case studies, apart from the conspicuous fact that they require more time and resources, is deciding what to include and what not to include in the research (Baxter & Jack, 2008). Because of the wealth of detail gathered through this approach, it is easy to try to follow up on every piece of information and continually

broaden the scope and objectives of the research, which makes it nearly impossible to systemize and analyse knowledge. Hence, "the establishment of boundaries in a qualitative case study design is similar to the development of inclusion and exclusion criteria for sample selection in a quantitative study with the added difference that these boundaries also indicate the breadth and depth" (Baxter & Jack, 2008). Furthermore, it is important as a researcher to be aware of one's own biases and not select a case simply because it confirms a pre-existing notion and, therefore, fall in the trap of the *"*perpetual error of the human understanding to be moved an excited by affirmatives rather than negatives*"* (Flyvbjerg, 2001)*.*

In order to tackle these challenges, I have carefully considered my approach to case selection and what kind of criteria should guide this process. I opted for working with a single case, which is to look at one company located in Denmark, and in order to maximize the utility of information from a single case, I chose an example with dense information content. According to a classification provided by Flyvbjerg, this is considered to be a "critical case" as it can permit logical deductions such as: 'if this is valid for this case, then it likely applies to many other cases as well' (Flyvbjerg, 2001). Alfa Laval's case is rich in information because they have been working with environmental reporting for some time now and they are a representative of a resource-intensive industry, thereby monitor and report on multiple indicators. And if a large and resourceful company like them is facing certain challenges in environmental reporting, it is highly likely that both other players of similar stature face the same situations, as well as smaller companies with less resources would also experience some of difficulties perhaps even to a larger degree. Furthermore, I have delineated the case not only by place (Alfa Laval) and context (Denmark), but also by activity – reporting on environmental factors, and excluding the other sustainability indicators (social, finance and governance). In the following chapters I elaborate in more detail about the specific choices made in relation to the research design.

To sum up, while it is true that the complex narratives derived from case studies contain a significant amount of detail, which is difficult to reduce to clear-cut scientific formulae, it is not impossible to generalize on the basis of a single case (Flyvbjerg, 2001). In fact, the case study approach enables an openness to unexpected insights that is beneficial for producing hypothesis and appraising new research directions. In addition, in disciplines where theoretical frameworks are still developing, case studies are especially important for theory building and testing.

4.2.2 Choice of area – Denmark

There are several different reasons why I chose to work with Denmark. Firstly, while Denmark might be considered a rather small country with a population of just under 6 million people, it holds a prominent position in the list of largest national economy index, where it is ranked 39th in the world (Reza, 2018), and some of the top Danish companies are key players with a significant global impact within their industries (Maiorca, n.d.). The largest industries in Denmark, in terms of contribution to GDP, are considered to be agriculture, energy, tourism, and transport (Ibanez, 2021). However, with great contribution often comes great pollution. Research carried out by the Eco Experts shows

that, on a global scale, the top seven most polluting industries according to their GHG emissions are:

1. ***"Energy (Electricity and Heating): 15.83 billion tons***
2. ***Transport: 8.43 billion tons***
3. *Manufacturing and construction: 6.3 billion tons*
4. ***Agriculture: 5.79 billion tons***
5. *Food retail: 3.1 billion tons*
6. *Fashion: 2.1 billion tons*
7. *Technology: 1.02 billion tons"* (Howell, 2022)

Since Denmark's economy relies heavily on industries with a significant negative impact on the environment, environmental reporting is of high importance in order to encourage transparency on environmental performance and support the uptake of more eco-friendly practices.

The second argument for selecting Denmark is that, in fact, the country has made significant progress in relation to adopting legislation on environmental reporting, which is later on developed and broadened to cover sustainability reporting. The *KPMG*[2] *International survey of environmental reporting 1999* states that Denmark was the first country to introduce mandatory public environmental reporting starting in 1996 (Kolk, et al., 1999). Approximately 3,000 companies, which were deemed to have "significant environmental impacts", were required to produce a "Green account" (Kolk, et al., 1999). These environmental reports were commissioned from the Danish Commerce and Company Agency, who also reviewed and approved them before they were published. The basic demands in relation to a company's environmental performance were producing a quantitative account presenting the following:

- *"Major consumption of energy, water and raw material*
- *Significant types and volumes of pollutants in the production processes*
- *Significant types and volumes of pollutants discharged to air, water and earth*
- *Significant types and volumes of pollutants in the company's products*
- *Significant types and volumes of pollutants in wastes from the company"* (Holgaard & Jørgensen, 2005)

However, at the time, the produced green reports were met with scepticism from the public (e.g. consumers) and companies experienced very little interest towards the reports they produced, therefore many of them considered this an unnecessary endeavour. The Confederation of Danish Industries (DI) voiced the concern that the demand for green accounts was 'disappointing' and proposed that environmental accounting should be voluntary (Holgaard & Jørgensen, 2005).

In 2001, the Danish Committee on Corporate Governance was established. The committee provides recommendations (soft law) targeted at publicly traded companies that serve as inspiration and a tool for companies to improve their corporate governance (including corporate sustainability) and they also provide them with a standard report form

[2] A multinational professional services network; website: https://kpmg.com/xx/en/home/about/who-we-are.html

(Committee on Corporate Governance, 2017). The mandatory requirements for reporting are generally outlined in the Danish Financial Statements Act, which was amended in 2008, when 1,100 companies had to widen the scope of their reporting to also include CSR policies, and how those are translated into action (Danish Commerce and Companies Agency, 2010).

In present days, Danish companies generally rank high on corporate social responsibility parameters and nearly 95% report on CSR in their annual report, and more than 40% link UN's sustainable development goals to their business operations (Beck, 2017). Despite this, according to a recent study made by KPMG (Survey of Corporate Responsibility Reporting 2017) more than 90% of the 94 largest companies do not acknowledge climate-related risks in their financial statements. This serves as the third rationale for selecting Denmark for this project - there is space for improvement, and hence, the contributions from my research can illuminate avenues for better consolidation and implementation of environmental reporting practices.

4.2.3 Choice of company – Alfa Laval

During the company selection process, I focused on identifying those that would potentially be affected by the CSRD, which implies they should meet at least two of the following criteria:

- Having over 250 employees
- Generating a turnover exceeding €40 million
- Possessing total assets valued at €20 million or more (Stehl, et al., 2022)

This would entail that the company has to urgently tackle the challenges posed by this new regulation, and therefore the topic of this project carries relevance for their current situation. Other factors I considered included the company's location in Denmark, and preferably their positioning within an energy or resource-intensive industry.

The later guarantees that the selected case will furnish me with sufficient information regarding corporate environmental reporting. As a company consumes more resources, it typically generates higher outputs and emissions, necessitating the inclusion of a broader range of environmental factors in their annual reports. I contacted multiple that fit the criteria, ultimately choosing Alfa Laval for this project.

Alfa Laval is a leading global provider of products in the areas of heat transfer, separation and fluid handling and cater to customers in an array of industries such as food, energy, the environment, engineering, pharmaceuticals, refineries, or petrochemicals. The company has a total of 37 manufacturing sites, and their products, systems and services are sold in more than 100 countries, and they have the capacity to deliver services in over 160 countries (Alfa Laval, n.d.).

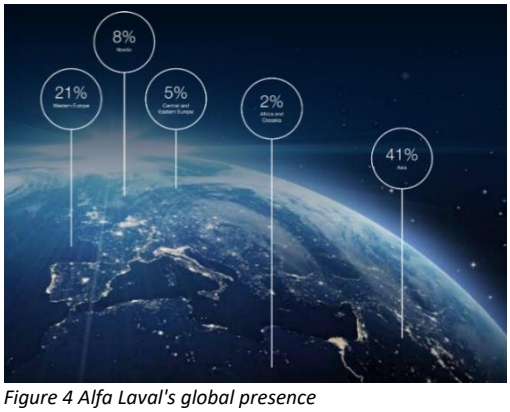


Figure 4 Alfa Laval's global presence
Image source: Annual and Sustainability report, 2022

Hence, their business model relies on the use of large amounts of raw resources and energy; and transportation is essential for them to receive these resources, to export products and reach their customers, as well as for business travel and their employees' daily commute. And with approximately 20,300 people employed by Alfa Laval around the globe, that is a noteworthy amount of mobilities. While Alfa Laval was founded in Sweden back in 1883, it currently has four locations in Denmark, in the cities of Søborg, Kolding, Aalborg, and Nakskov (Alfa Laval, n.d.).

At the same time, Alfa Laval has taken big strides in relation to environmental reporting, as they already have formulated a sustainability strategy and produce annual sustainability reports; in part because of increasing legal requirements but also because of rising demand from stakeholders and internal aspiration to be more responsible towards the environment.

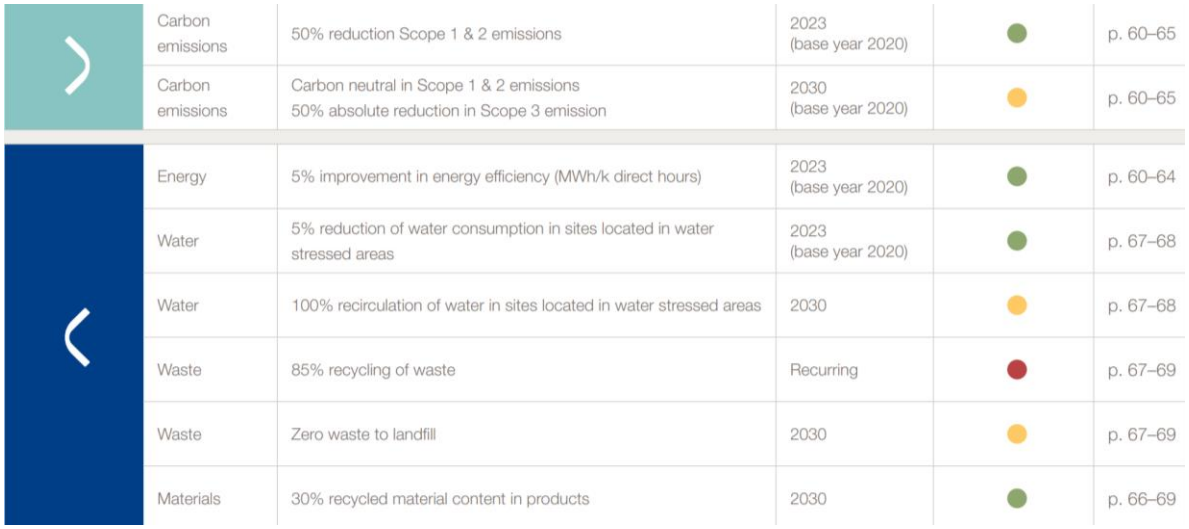
Their sustainability strategy is based on four business principles:

1. *"CARING- We care about every individual's rights and opportunities including their safety and well-being.*
2. *COMMITTED- We are committed to ethical conduct within our organization and in all external business relationships. Honesty, integrity and respect for others are values that we live and work by.*
3. *TRANSPARENCY- We engage in open dialogue with all our stakeholders to develop business relationships built on trust.*
4. *PLANET- We are in a unique position as our products make a significant contribution to reducing the environmental impact of industrial processes. We also have a responsibility to continuously reduce the environmental impact in all areas of our value chain."* (Alfa Laval, 2022)

Furthermore, in their sustainability report, Alfa Laval highlight their contribution to the development of innovative technologies that support their customers in becoming more environmentally friendly. For example, they create products and solutions to "*help customers monitor and manage the implementation of new regulations and guidelines relating to areas such as energy needs and emissions from shipping"; "reduce water consumption in industrial processes, improve water quality, and increase the amount of recycled water"; "reduce the sulphur content of ship exhaust gases"*, and many others (Alfa Laval, 2022).

The table below shows the company's sustainability targets and the progress achieved on each of them thus far (Alfa Laval, 2022, p. 58).

Table 1 Alfa Laval's environmental targets



	Carbon emissions	50% reduction Scope 1 & 2 emissions	2023 (base year 2020)	●	p. 60–65
	Carbon emissions	Carbon neutral in Scope 1 & 2 emissions 50% absolute reduction in Scope 3 emission	2030 (base year 2020)	●	p. 60–65
	Energy	5% improvement in energy efficiency (MWh/k direct hours)	2023 (base year 2020)	●	p. 60–64
	Water	5% reduction of water consumption in sites located in water stressed areas	2023 (base year 2020)	●	p. 67–68
	Water	100% recirculation of water in sites located in water stressed areas	2030	●	p. 67–68
	Waste	85% recycling of waste	Recurring	●	p. 67–69
	Waste	Zero waste to landfill	2030	●	p. 67–69
	Materials	30% recycled material content in products	2030	●	p. 66–69

4.2.4 Choice of knowledge institution - UCN act2learn

When considering what kind of institution would be relevant to interview to supplement the discussion with Alfa Laval, I held the following criteria in mind:

- The institution should work with Danish companies and leverage deep understanding of the local context.
- It should have a relatively broad reach, spanning across different sectors.
- It offers educational opportunities for professional development in the fields of environmental reporting and sustainable development.

After conducting some research, I came across UCN's act2learn department, which matched the specifications and were able to meet with me.

UCN act2learn is North Jutland's largest accredited provider of courses and adult education (efteruddannelser). They are part of University College Northern Denmark, and they are responsible for developing and proving courses and educational activities targeted towards adults, who need a certain set of qualifications, regardless of whether they are employed or unemployed (UCN, n.d.). They also offer curated courses for companies, who want to furnish their employees with a specific skillset or certification. In this case, act2learn teachers prepare a tailored course and go out to the company and hold a workshop with a selected department or a group of employees. They often cover topics such as digitalization, management, leadership, and production optimization.

Currently they have recognised a strong demand for sustainability courses both because of the European incentives and legislation, but also because some companies are actually starting to approach UCN act2learn and require help to get the education that they need to be compliant with the rules of the future. They currently provide two short sustainability courses with a focus on the sustainable development goals and circular economy. However, companies often reach out to them with specific needs and questions,

and thus the interview with UCN act2learn has provided me with some very interesting insights into the internal challenges of environmental reporting.

4.3 CASE STUDY METHOD: INTERVIEWS

The need to get thorough and nuanced insights into the topic under inquiry motivated the use of semi-structured interviews as a research method in this paper. Semi-structured interviews provide for a mix between standardized questions and the chance for respondents to offer open-ended responses, offering a flexible and explorative approach (Brinkmann & Kvale, 2015). Furthermore, semi-structured interviews promoted a favourable atmosphere for developing a relationship and a degree of trust and rapport with the participants, thereby encouraging forthright and in-depth responses. In addition, the interviews allowed me to capture the diversity of individual perspectives and reflections and collect hard-to-quantify data, thereby deepening and validating the research conclusions.

I carried out a total of three interviews: two interviews with the Climate Program Manager of Alfa Laval and one interview with two representatives of UCN act2learn. The table below shows further detail on the conducted interviews.

Table 2 Interview details

Interviewee	Company/Institution	Position	Interview length	Abbreviation
Camilla Madsen	Alfa Laval	Climate Program Manager	30:47(1st)/ 39:17 (2nd)	C.M.
Jesper Sig Nielsen and Suzette Andersen	UCN act2learn Erhverv	Udviklingskonsulent (Marketing) and Udviklingskonsulent (Sustainability)	42:02	J.N. and S.A.

For each interview I wrote an interview guide of 9 up to 21 questions (Appendix A, Appendix B, and Appendix C), which were divided thematically, to help steer the conversations towards the desired information objectives. When selecting the persons to interview for this project, I had the following criteria in mind:

- Industry experience – they are working in a company/institution that works with environmental reporting matters, either as one producing such reports or as one offering training activities in that regard.
- Specialization and roles - they are directly involved in the activities mentioned above, thereby have first-hand experience with the challenges and tasks that accompany said activities.
- Geographical location – since the project is set in the context of Denmark, I looked for experts, who are located and working within the country.

The aims of the two interviews with Camilla were to gain insight into the scope of their Climate Program, explore the variety of activities that measuring and reporting includes, understand, where obstacles or challenges occur and how they are being overcome, gain an overview of the types and amounts of resources necessary to carry out reporting

activities. As Camilla primarily oversees the Climate Program, she possesses extensive expertise in CO2 emissions calculations and reporting, but her familiarity with other environmental indicators like material recycling and water usage was more limited. Hence, I asked to schedule an interview with the manager of their circularity program. However, regrettably, there was no one accessible for such an interview at the given moment.

Nonetheless, through the interview with act2learn I was able to procure information regarding other aspects of environmental reporting, and thus, was still able to gain a broader overview of the researched subject. Furthermore, my discussion with act2learn provided valuable insights into the training opportunities available to companies, who want to upskill their staff and start or improve their environmental reporting activities. It also allowed me to get a sense of the most common questions and knowledge gaps that companies have in relation to environmental reporting; and identify recurring attitudes held by companies and managers towards the subject matter.

The interviews with Camilla I conducted online, while I had the opportunity to meet the act2learn representatives in person at the UCN campus in Aalborg. I recorded all three interviews after obtaining permission from the participants, and thereafter, I transcribed and coded them for the analysis.

5 ANALYSIS

In the following section I will present the major findings from the data collection methods depicted in the previous chapter, and analyse the gathered information according to the theoretical framework presented in chapter 3.2. I will draw on inputs from the interviews with Alfa Laval and act2learn in order to depict specific examples of the multifaceted challenges of the environmental reporting process in the three main categories established by Baret & Helfrich (2018).

5.1 COMPLEXITY, IRREDUCIBILITY, AND SCALABILITY

5.1.1 Complexity

Complexity refers to the heterogeneity characterizing the topics and terminology to be included in an environmental report as well as the multiplicity of participants and actors that affect and influence the reporting process. Thus, one of the most important challenges that companies have to consider when commencing with environmental reporting is what exactly they should report on. In the case of Alfa Laval, they have developed a sustainability strategy that outlines four separate categories of actions:

- "Climate", which focuses on reducing carbon emissions in scope 1, 2 and 3
- "Circularity", which related to safeguarding natural resources through more efficient manufacturing, extending product lifespan and recycling materials
- "Caring", which is about creating a safe and inclusive culture and relationships within the company and with external partners

- And "Committed", which centres on ethical conduct and anti-corruption[3]

By having these separate categories outlined in their sustainability strategy, the company is then better able to break down the complexity of sustainability into comprehensible pieces and, thereafter, identify specific factors to be measured in order to ascertain whether they are on track with achieving their set commitments.

In relation to the climate section, Alfa Laval have the following objectives:

> *"When we are talking about carbon neutral, we are only talking about scope one and two, and we are talking about carbon dioxide. And our ambition is to go a hundred percent reduction in 2030, compared to a baseline that's 2020. And, actually, we also have a target this year in 2023 to go 50% compared to 2020. So, a rather aggressive one the first three years. And then, you know, moving into where we have removed all the low-hanging fruit than we have the last of the, OR toward 2030 before we see a hundred percent reduction." (C.M.)*

Alfa Laval are monitoring and reporting in accordance with the Greenhouse Gas Protocol meaning that they measure emissions of the major polluters, which are: CO2, methane, Nitrous oxide (N2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF6) (AQ Green TeC, 2021). However, when it comes to targeted reduction in emissions, they are focusing their efforts predominantly on CO2, as it is broadly accepted to be the most common and the most important greenhouse gas emitted through human activities (Brander, 2012).

When collecting data about GHG emissions, the standard practice is to divide it into three scopes and *Figure 5* below shows a breakdown of those scopes and what they cover. It is evident that the information that the company has to collect is not only in regard to emissions produced from own operations but also data from external partners and end consumers. Scope 3 is usually the most difficult one to handle as for many organisations that is where the majority of their emissions will fall and it includes things like employee commuting, business travel, upstream transportation and distribution, operational waste, purchased goods and services and others (AQ Green TeC, 2021).

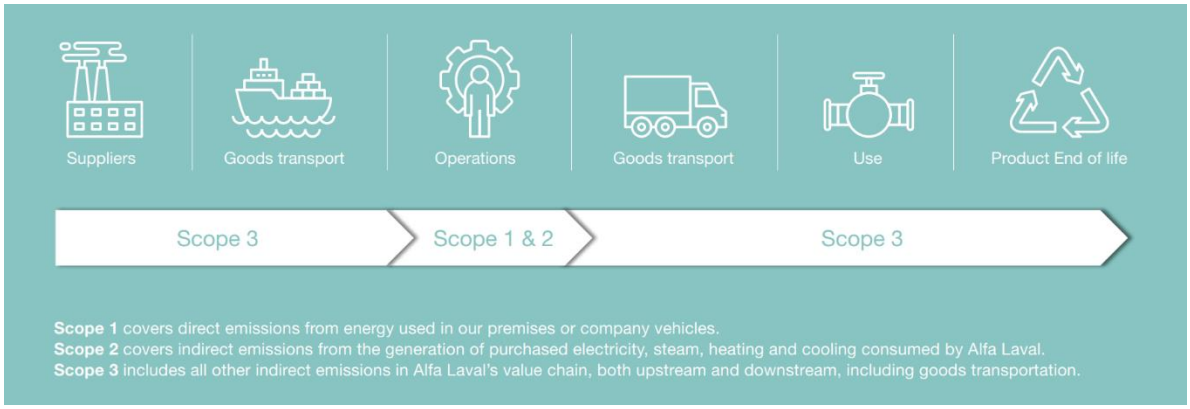


Figure 5 Emissions scopes

[3] The last two categories, however, fall outside of the scope of this paper and, hence, will not be discussed further.

This represents another significant challenge to the company, which is that in order to have a comprehensive environmental report, there needs to be good collaboration with actors up and down the value chain, who are also committed to gathering the required information:

> *"But you could also go down to each order line or each line we have bought from a supplier, actually requesting from them, you need to tell me the weight of it, you need to tell me where it's produced, how it's produced, all of these different, so we get, so it's the next level, the refinement of actually getting better and better at estimating our emissions."*(C.M.)

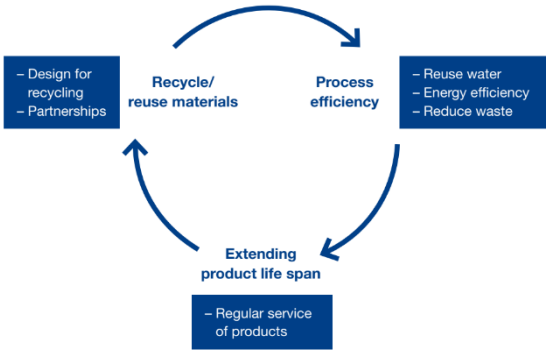


Figure 6 Circularity, Alfa Laval

In relation to the circularity category, Alfa Laval is mainly concerned with water and energy consumption, waste management, and products' life cycle (figure 6).

At present, their report does not include components such as an evaluation of double materiality [4], effects on biodiversity and ecosystems, the state of water and air quality, as well as disclosures regarding toxic chemical releases. Regarding this matter, C.M. states:

> **"***No, and I also think, it will be as a refinement. For the next annual report and the report to come. But it is a maturity journey that we are also on, we are not at that level yet."*

Finally, determining the baseline year for reporting represents another significant task:

> *"When we are talking data quality, it's a huge thing to establish the baseline for a company that is the size of Alfa Laval. So now that we okay, when you apply for the science-based targets, you don't have to have a hundred percent, but you have to sign up for it, that you have a certain percentage and now the refinement comes, okay, we need this small part of the company, or we actually also need to add these, one small multi-brand over here. Or we have some transportation that is not following the contract, so they are not in the system. But you also have to account for that or, so you, you start to find all these smaller details that needs to be added. It's not that it's a bad thing. And it's the transition that everyone is going through that you start with a big chunk. You really figure out how big is our footprint. But then drawing the perfect line of where our footprint is, that's the work that, that is ongoing now and it's normal. Like it is the same transition that all companies are going through. That establishing the baseline is a huge work. And now you go into getting better and better..."*

[4] *"The CSRD incorporates the concept of 'double materiality'. This means that companies have to report not only on how sustainability issues might create financial risks for the company (financial materiality), but also on the company's own impacts on people and the environment (impact materiality)."* (source: ttps://ec.europa.eu/newsroom/fisma/items/754701/en)

Establishing a baseline year for environmental reporting is important as it acts as the reference point for companies to make projections regarding their future environmental influence. Moreover, it serves as a benchmark for forthcoming years, enabling an assessment of the company's success in reducing adverse impacts.

5.1.2 Irreducibility

In their discussion of irreducibility, Baret and Helfrich point out two primary factors that make it challenging to condense sustainability reporting into mere numerical figures: firstly, certain aspects of the sustainability report cannot be represented by numbers alone (e.g. company's vision and mission statement, values, etc.) and secondly, some indicators are too complex to be precisely quantified, such as how could climate change impact the company in the foreseeable future (2018).

In their sustainability strategy, Alfa Laval work mostly with indicators that are relatively straightforward to measure and calculate such as GHG emissions, and energy and water use. Particularly concerning GHG emissions, as mentioned before, they make use of the framework established in the Greenhouse Gas Protocol:

> *"…when you use the Greenhouse Gas Protocol, then you get the mathematical or the framework, like this is the methodology, this is the formula you use for calculating the footprint from your sourcing, for example. But then we do the calculation ourselves."*(C.M.)

This protocol provides estimates for average GHGs generated through different activities that the company is not able to measure on their own, as well as guidance on how to calculate those emissions. The protocol was published in 2001 by two NGOs, namely the World Resources Institute (WRI) and the World Business Council on Sustainable Development (WBCSD), and has become the most widely adopted emissions accounting standard on company level (Green, 2010):

> *"that is the most recognized frameworks to use, it's the framework you need to use if you want to go for CDP reporting, is the one you need to do if you want to go for science-based targets validation. "*(C.M.)

There is a lot of merit to be derived from condensing certain data into numerical form, even though it may not be entirely precise but more a ballpark estimate:

> *"I think it's, you know, what gets measured is also what gets done or what you're able like to see in numbers, I think when you suddenly see a number and how much CO2 Alfa Laval is emitting, then that's hopefully fuel on people's internal engine too. Okay. Now we need to do something and that we are in a position to actually do something. And also, once you start seeing the reduction, then that should make you super proud and it should also be even more fuel on the engine. Okay we can actually do something to reduce our footprint. So, I think it's the most motivation part, but also it's creating a picture of an urgency. Like we are a company that is emitting CO2 and a lot of CO2 because we are a big company. And we need to do something about that. We cannot really hide away."*(C.M.)

It allows for the monitoring of the company's environmental performance, facilitating better future planning, the establishment of more specific objectives, and the implementation of targeted initiatives with tangible real-world impacts.

A specific example of data that was too difficult for Alfa Laval to collect is daily commuting of employees, which falls under scope 3:

> *"When it comes to commuting, that's a bit more difficult, because we cannot, like everyone cannot record how they go to work. But the greenhouse gas protocol comes based upon a lot of service. They come with an average per each employee that you can use and saying, this is how much an employee is emitting. And then you multiply that with the number of employees you have in that particular year. We are a bit lower than that because in China we are actually serving the employees with buses to the production sites, so making sure that everyone is not going by car. And a lot of people are actually using those buses. So, if you have some assumptions saying, okay, it's not 1.7 ton of CO2 per employee hours is one point something. And then if you have the right assumptions for why, then you can, you can state that."*(C.M.)

Additionally, I want to also introduce a third dimension of irreducibility that aligns with the logic of the previous two presented by Baret and Helfrich, and that is the challenge of capturing the essential knowledge and competencies required for environmental reporting and reducing it to a short and concise learning programme. During my interview with act2learn, it transpired that many companies are eager to enrol their employees in brief training programs, with the hope that they would be able to acquire the necessary skills and knowledge to initiate the process of environmental reporting:

> *That's definitely the biggest group that are just like, uh, we need to do sustainability. What can we do? And then usually they're not ready to commit to a course. They maybe think they can have like half a day of a little presentation and then, okay, they can do sustainability.* (S.A.)

Other companies that have reached out to act2learn have tried to reduce complex problems into simplified inquiries asking for a speedy solution:

> *And then we have a smaller group of clients, that'll be very specific. Okay, so a few days ago, my colleague had someone call me and call us up and she forward it to me and he was asking, he was in an electronics company that wanted to switch something electronic for something that was hydrogen based instead. And he was like, do you know what the difference in the CO2 emissions are? …So, we do get some of those things where people are like super, super specific about something they still hardly know themselves. It's like, so I want to change this and I need to feed that information to some of my clients, do you know what it is.* (S.A.)

Companies may sometimes try to get immediate specific answers to complex environmental questions, which require expertise and extensive research, and attempt to shorten the time needed to obtain such data by outsourcing the work. However, not having a good grasp of the intricacies of the environmental issues they are dealing with and assuming such data is easily available, could lead to misunderstandings and unrealistic expectations.

5.2 INHERENT STAKES OF REPORTING

5.2.1 Responsibilities towards stakeholders

One of the most significant purposes of environmental reporting is to reduce the information asymmetry between companies and regulatory bodies and other stakeholders. In other words, the company leadership have a responsibility towards their shareholders, stakeholders and regulators to present them with accurate and up-to-date information about their operations and their impact on environmental level (Baret & Helfrich, 2018). On the one hand, this can be driven by the company's own motivation to be a first mover and to have a competitive edge, as well as responding to increasing pressures from clients and end consumers. On the other hand, the obligation for environmental reporting is imposed by European legislation and national law, and thus, is exerting a strong influence as well.

In the case of Alfa Laval, the implementation of environmental reporting was driven by a mix of different internal and external factors. Managers within the organisation aimed at leading the green transition and transformation of the company in order to be prepared for the challenges of tomorrow. This also coincided with pressure from clients, who demanded to know more about what Alfa Laval is doing in terms of different indicators, for instance, reducing their carbon footprint, circularity, chemicals, etc.:

> *"… we're starting to see, how we are being affected by the value chain, and especially, it's hitting us now from the customers, our customers are requesting us to do it. You need to tell me how much CO2 this product actually emitted. And now we need to go back to our supplier saying, you need to tell me how much this particular type of steel or titanium has emitted before it arrived at our factory. So, you can see that we are starting to see the snowball effect in the value chain. And we are especially seeing it for the areas and industries that are connected to consumer or closer to consumers. So for example, in marine, we have different types of segments. So, we of course have bulk carriers, we have oil tankers, chemical tankers, but we also have containers and containers are closer to consumers. And then suddenly have Ikea or Volkswagen or H&M starting to say, our consumers actually want to know this, so we need to track back how much this container was emitting when it was coming from Asia to Europe, or to US. And then they have to go back to the ship, which is Maersk, and Maersk is our customer. And Maersk goes back to Alfa Laval. So, we start to see that the industries that are close to the consumer, is the same with food and water. Uh, they are also coming back now, we need to know, like one of our customers could, for example, be, Heineken, they are also giving the pushback to us, whereas in energy, that's a bit different story because it's still so far away from the customer. You know, Vestas or Siemens… it's not directly connected to a consumer pressure."*

Another example of pressure from the customer side comes from the interview with act2learn:

> *"The most specific example I think I can give now is that a couple of weeks ago, we had a presentation that we did in the job center in Bronderslev, where they had invited a lot of production companies and we had invited one of our former course*

takers or former students, … a concrete production company… and now they want to take, sustainability courses because they know that a lot of their customers in the B2B market are getting more and more, focused on whether their suppliers fulfil the requirements for sustainable transportation and production... So in order to continue to be a supplier of concrete for, especially entrepreneurial businesses, they need to start figuring out how to make reports of sustainability and do the emission calculations and whatever else it is that they have to provide of documentation." (J.N)

While it seems that the main source of pressure is coming from the customer side, legislation has been important in giving a more prominent status to environmental reporting within companies themself and setting the ambition to elevate it to the level of financial reports. In the case of Alfa Laval, the CSRD has had an impact in this regard:

*"We had our sustainability reporting for the first time in our annual report this year, or for 2022. And it's just going to be more, and our reporting is going to be more standardized, and that is very much driven by the CSRD. So I think regulation is driving a lot of it, but you can see that maybe we want to be a bit of a front runner. We are maybe one or two years before this legislation, but down to the details, really getting the, the standard of the numbers, like, so it, they come up to the same level as the financial numbers. That will be this legislation that is driving that. But we want, we want our customers to see us as a company that is, a sustainable company. "(*C.M.)

Another challenge is understanding who needs what kind of information. Shareholders are interested in the big picture whereas, customers in the products:

*"… it's our investors that are the most interested [*in the sustainability report*] because our customers, yes, they are interested what we are doing. But I think they eventually will become more and more interested in looking at the LCA, so the specific product that they are buying and not for the full Alfa Laval group, but that specific product. But for now, the customers are also looking at the sustainability reporting. But I think that that will change, they want to see more and more details. So the investors will be the ones that are really in interested in looking at our sustainability reporting on a group level."*

Supplying the necessary information to meet the diverse needs of these stakeholders demands not only knowledge and proficiency but also time and resources. For instance, during our conversation with act2learn, the topic of the costs associated with conducting an LCA for a single product arose:

"I know, I asked because one of the companies I was working with were really interested in having a LCA done on one of their products. So, it's like a bean bag. So, a quite simple product and it was, they had I think a six-month waiting time. And then they said it would be about 120,000 Danish crowns. To have that one LCA done. So, they were like, okay, we're not going to have a LCA. They're like, nope, we're not going to do it." (S.A.)

A life cycle assessment, or LCA, "is a systematic mapping and assessment of environmental and resource impacts throughout the life cycle of a product / product system" (LCA.no AS, n.d.). LCA encompasses a wide spectrum of environmental concerns and includes topics such as climate change, freshwater consumption, changes in land use, eutrophication of aquatic ecosystems, adverse effects on human health due to toxicity, the depletion of non-renewable resources, and the ecological toxicity arising from metals and synthetic organic chemicals (Bjørn, et al., 2017). Some of the important applications of this tool are recognizing opportunities for improvement, making informed decisions, selecting environmental performance indicators, and formulating marketing claims (Tillman, 2000).

Returning to the matter of pressure from legislative bodies, it could be argued that there is an ongoing debate revolving around whether the legislation should introduce stricter protocols for environmental reporting or instead provide businesses with an extended transition period to adapt their processes and align with the updated requirements. According to C.M., the former is the way to go:

> *"Legislation it's driving a change. And the faster, the better, I would say. Because legislation is what gets everyone going. Otherwise, it's only going to be the first movers that will actually do something and have reduction activities on this matter. So I think the only downside to regulation is that it's soft, often too slow. And that is behind what society is requiring, but also what nature is requiring and what some of the front runners are requiring. Because if regulation where in front of this topic, then we would not be sitting there discussing with the customers, is this really worth paying for? If regulation was saying you have to do it, then we would not be discussing the price of it. We would be discussing how fast can you deliver?"* (C.M.)

The opposite stance seems to be held by the Danish Committee On Corporate Governance as can be seen in their response to the public consultation on the European Commission's initiative on Sustainable Corporate Governance from 2021 (Appendix D):

> *"The due diligence duty should be kept as a matter of soft law, and reference should be made to international recognised guidelines within the area such as OECD guidelines for multinational enterprises etc. Focus in this regard should as mentioned above be on processes and transparency rather than on results. To ensure a level playing field, regulation should include large companies (e.g. over 500 employees), both listed and non-listed companies, but it is important that especially SME's and microenterprises are not met with new burdensome requirement."*

The committee goes on to conclude that it is better to await the effects of existing initiatives such as the NFRD, Disclosure Regulation, Taxonomy Regulation, Shareholder Rights Directive II (SRD II) before creating new legislative proposals that take a firmer stance on sustainability reporting.

This discrepancy between what the market expects and what governments propose might be creating an air of uncertainty around environmental reporting that fosters hesitation and reluctance to take up a more proactive approach towards environmental reporting. I would go as far as to say that, even though government institutions may aim

to safeguard smaller businesses (less than 500 employees), prevailing market forces are already exerting significant pressure on them, leading many to assume the "burden" of environmental reporting. In the absence of well-defined regulations and standards to provide direction and clarity, this situation could potentially place them at a disadvantage rather than alleviating the pressure they face.

5.2.2 Standardisation and coordination

According to Baret and Helfrich there is a coordination problem between companies and stakeholders on how to address the different aspects of environmental reporting. Unlike with financial reporting, where there are very clear rules and the form of its representation constitutes common knowledge, there is still no strong consensus around the significance and format of environmental reporting (2018). The authors point out that these issues sit at the core of conventions theory and how conventions are formed. They argue that local conventions are "*made by participants enjoying a cognitive proximity and, therefore, a bigger tendency to communicate*" (Baret & Helfrich, 2018). Hence, the first adopters play an important role in elaborating local conventions, which predates the stabilisation of a more global convention.

In the case of Alfa Laval, their representative shares that the company often participates in different forums and events, where they can meet and discuss with like-minded companies about the reporting journey, and share insights and personal experiences:

> *"…we go to Climate Week in Stockholm or in New York (see https://www.climateweeknyc.org) . We go to CUP more us being out there speaking about Alfa Laval's journey. And then of course we have the reporting side of it, but otherwise, I think it's more us coming to these different types of events, being part of Exponential Roadmap (see https://exponentialroadmap.org), First Mover Coalition (https://www.weforum.org/first-movers-coalition)." (C.M.)*

These events and collaborations serve as a means of congregating, joining forces and exchanging knowledge, and present a good opportunity for companies to form strong alliances and cooperate on common goals. This can result in the consolidation of a convention on environmental reporting as companies share and borrow best practices, create mutual agreements and commitments, and exert influence on policymakers by urging them to implement more robust measures:

> *"So I think our opportunity lies within the collaborations we are having with other large companies, like really putting pressure on, we are doing a lot of things and we are in collaborations and we are trying to see if we can develop white papers to put pressure on politicians and lobbying."* (C.M.)

C.M. goes on to give a specific example of a challenge that companies face because of lack of standardisation and that is that they can get overloaded with requests for information:

> *"So one example is the questionnaire you are sending to a supplier. Why not standardize that? Instead of us developing one, Siemens developing one, MAERSK developing one. Like we are asking the same questions, but maybe not exactly the same question. Alfa Laval ourselves, we are receiving so many questionnaires, but we*

cannot copy paste our answers. And it's the same with the suppliers that we are sending questionnaires to. So why not have one standardized questionnaire coming from EU? Yeah, so that's, that's where big companies can come in and. I think put pressure on their, the regulation."

"… could you just link to the CDP reporting every time a supplier is asking for these answers, you can find them here. If that was an open platform, you know, or you could buy access to that platform and see the answers from all of your suppliers. Because CDP is a very extensive work, I know it takes almost half a year for us to collect everything, or we start to prepare the organization, we will come, we will ask these questions and it could be super smart that you could use." (C.M.)

Increasingly companies are sending out self-assessment questionnaires (SAQs) to suppliers in order to gain information about environmental, social and governance indicators and to evaluate potential threats to their supply chain sustainability performance (Augustine, et al., n.d.). C.M. states that these questionnaires often vary across industries and individual companies and responding to each one can become a burdensome duty. She, therefore, sees this as an opportunity for the EU to step in and offer a harmonised approach that also integrates existing platforms and tools.

5.2.3 The quest for legitimacy

In order for environmental reporting to be seen as a legitimate and trustworthy source of information, it needs to be well-structured and supported by frameworks and guidelines that are widely recognised.

As a guiding framework for their environmental reporting, Alfa Laval use the one provided by Carbon Disclosure Project, and they report to them every year. The CDP is a non-profit organisation that runs a global environmental disclosure system that supports companies, cities, states and regions to measure and manage their risks and opportunities on climate change, water security and deforestation (CDP, n.d.). The reason why Alfa Laval have chosen the CDP is because they perceive them as the most well-established and acknowledged one available.

"I'm not sure that there's anything you need. But there are things that you would like to get in order to get the stamp. And I think the first one is you can get the CDP, recognition or reporting and the rating from them. " (C.M.)

While not obligated to get any specific one, Alfa Laval has chosen to put efforts and resources into obtaining several different kinds of accreditations and certifications, in addition to the one form Carbon Disclosure Project, such as Science-based targets initiative, and EcoVadis.

"…You can, then you get the science-based target validation of your target. That's also stamp, uh, we get a stamp from NASDAQ. Uh, and then we have also EcoVadis, but EcoVadis is more on the 'S' and the 'G' and not the 'E' in sustainability..." (C.M.)

When Alfa Laval were designing their sustainability strategy, they reached out to the Science-based targets Initiative, which is a partnership between the CDP, the United

Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) (SBTi, n.d.), to validate their targets. In practical terms, the SBTi assists companies in establishing verifiable corporate greenhouse gas emission reduction objectives. To be considered "science-based," these targets should be in accordance with the level of decarbonization necessary to limit the global temperature increase to less than 2 degrees Celsius compared to pre-industrial levels (Fink, 2018). The process of verifying a company's targets can take several months of communication and verification with the SBTi and can also be a costly undertaking – in the case of Alfa Laval – 14 500 US dollars.

Certifications and accreditations can be used by companies as a form of assurance that the claims they make in their environmental reports are reliable and credible, and truly represent the company's efforts and achievements (KPMG, 2002, p. 18). On the other hand, in some cases it is obligatory to obtain certain certifications in order for a company to be able to perform its daily operations. However, acquiring the necessary certification is not always a straightforward process:

> *"And there was also a lady from industrial cleaning, I think. That she was very frustrated because within the field she was in, with the chemicals also falls under a certain branch of sustainability. And there are some rules about that. And she had to put all her, employees on a course that taught them how to handle and how to dispose of chemical waste, basically. And she was extremely frustrated that there was only like one place in Denmark that this course was held and the next one did not start until too long out into the future. Which meant that the new hires that she got this summer, were actually not eligible to work because they did not have the certification that they needed in order to fulfil this job that she hired them for. And there was nowhere that she could get the course because there were no providers for the course plan."* (J.N.)

This quote elucidates the problem of inadequate infrastructure for environmental education and certification in Denmark. The consequence of this is limited access to training that could hinder business operations, potentially affecting productivity and environmental efforts.

Another way of ensuring legitimacy and transparency is by joining trusted networks (e.g. EcoVadis in the case of Alfa Laval) that provide sustainability ratings to paying members:

> *"EcoVadis is a platform, an IT platform that companies can, pay for being accepted into, and then EcoVadis go through your sustainability reporting. Um, and then they rate you so you become platinum, gold, bronze, or silver. And then for example, if Alfa Laval was looking for a steel producer, we could go into the platform, we could look at the different steel producers and only say, we only want to go for platinum or gold."*
>
> *"…It's a way to scan your suppliers if you have more than 10,000 suppliers and you cannot go through all of them, that's a way of going and figure out where do we have our risks? Are there any suppliers you really need to look into." (C.M.)*

Hence, utilizing similar networks serves a dual purpose for companies: it not only facilitates communication of their environmental initiatives to stakeholders but can also function as a tool to aid in procurement and the mitigation of potential risks.

Apart from addressing the issue of choosing a specific framework for the reporting process, companies must also ensure that their report is audited and certified compliant by an independent third-party body with the right credentials (Baret & Helfrich, 2018). In addition, the company must also provide a protocol document describing the methodology applied to defining, measuring and calculating the provided data. That is because even if some environmental indicators are stipulated in the law, they are still subject to interpretation, and variations are likely to persist between companies.

5.3 CORPORATE EXPECTATIONS

5.3.1 Organisational learning and change

The process of environmental reporting is one underlined by complexity and increasing regulatory scrutiny and, therefore, runs the risk of confining itself to a burdensome technical task that employees see as a constraint to their work routine, as opposed to an opportunity for corporate growth and prosperity (Baret & Helfrich, 2018). Therefore, one of the most significant challenges for companies will be to find a way to turn the reporting process into a tool for collective action and organisational learning that is understood throughout the company by all different categories of staff. This suggests that companies should allocate time and resources to train and educate their staff on the fundamental principles of environmental reporting: not only those in charge of the reporting process, but also those indirectly linked to it:

> *"And then I think sustainability is also starting to touch everyone's job. No matter where you're sitting, no matter if you're finding people that we need to hire in HR, you need to think about sustainability. Suddenly finance also have to think about sustainability because we'll start to have internal carbon pricing, which will go into the financial numbers. So I really think you cannot really say that sustainability is not touching every part of the organization, but dedicated resources. We have a group sustainability and we have sustainability managers in each business unit. But that's the dedicated people. And then I'm starting to see that it's also affecting everyone else in the business."* (C.M.)

When speaking to Alfa Laval's representative, we discussed the different ways the company is addressing these issues. For instance, they have an appointed person for each section of their sustainability agenda, who creates and releases information and training materials for staff members to keep up to date:

> *"And then my responsibility is also, communication in Alpha Laval in general. So for example, releasing webinars, explaining our targets. So, making sure that when we meet external partners, like customers, universities or, suppliers, strategic partners, that everyone in Alfa Laval can explain the targets, for example, we need to be able to explain it or that everyone understands on a high level what do we mean with the*

different scopes? And what is excluded, for example, from Alpha Laval's emission reporting because of course some of them are not relevant for us."

Furthermore, the staff have been introduced to some key concepts surrounding CO2e emissions such as the three scopes of emissions and what they mean, as well as on the Greenhouse gas protocol and the Science-based targets initiative, what they encompass, how the company uses them and why. In some cases, Alfa Laval has also turned to external experts to provide concise and targeted training for their employees:

"LCA was an, an external expert that came in and did that training. … It was two hours, but it was on a very high level, so it was more LCA training for everyone in the company, no matter if you're in R&D, if you're in sales, if you're in marketing and you need to like, do marketing campaigns around our LCA. So if a customer asks about LCA or you want to request an LCA from a supplier..."(C.M.)

Regarding how the Climate program manager keeps her skills and knowledge up to date, she explains:

"Yeah, I think for me, or in my role, it's more me reading a lot of papers, but then also participating in a lot of external discussions, collaborations, forums, because I feel that that is where you learn more. You put things into practice, or you hear other reflect upon, okay, this protocol, or this guideline, or this directive. So, I would not say I use a lot of time on sitting in different e-learnings. But I participate in webinars, hearing experts, what are they saying, what are they reflecting upon what are their thoughts around CSRD and I would say that that is more… so it's more self-driven learning than it's me going into a learning platform and then going through different courses."(C.M.)

Thus, it can be argued that even the company's sustainability experts have to recognise that their learning journey is ongoing. They need to remain inquisitive and open to new solutions, which can be accomplished through sharing insights with peers, engaging in discussions, reading research literature, and participating in specialized courses, among other strategies.

However, the question remains how companies with no internal expertise can begin this process of learning about environmental reporting and who can they turn to for help. When discussing certifications and accreditations in section 5.2.2, it became evident from my interview with act2learn that there is a notable scarcity of specialized institutions offering bespoke services in Denmark and this observation can also be extended to the context of knowledge institutions and course providers in the country:

"…companies are actually starting to approach us and say that because of this new law that is coming, they need somewhere to turn to get the education that they need to be compliant with the rules of the future.

"…And that is kind of the challenge that we are facing right now. Because even though that there's a guideline from, or a rule set from the European Union and a guideline from the Danish government, there's not really any framework for how to handle the education and provision of knowledge for the people who need it right

now. We're kind of in a limbo right now where we know we have to be more green and more sustainable and we tell all our companies that we need to be this, but there's not really any, anywhere they can turn to get the education that they need." (J.N.)

Therefore, tackling this issue necessitates that the involvement from regulatory bodies and national governments does not end with enforcing a legislative framework for environmental reporting but also enabling and supporting the establishment of a knowledge network that can guide companies in their reporting journey.

The cost of training should also not be understated, not inly in terms of the actual price of a training but also in terms of employee time spent on activities outside of their daily duties:

"Yeah, I think it's, I think it's okay. So the basic cost for. One of our 5 ECTS point courses is I think 9,600 per person. So, it's a little expensive. But then there's a lot of compensation you can have. Because you're further educating your personnel…"(S.A.)

"…But they see it as a large expenditure because they also often time have to take like eight employees out of the daily routine

…When companies are less busy they like to send employees to get educated. Whereas if they're very busy, it's too, even though it's free it's too hard to have the employee be out of the office" (J.N.)

5.3.2 Organizational routines

A routine can be described as 'a repetitive, recognizable pattern of interdependent actions, involving multiple actors' (Feldman & Pentland, 2003). Routines allow employees to make decisions at a subconscious level and reduce the complexity of individual choice, thereby limiting uncertainty and conserving energy and cognitive power for non-routine tasks (Greenhalgh, et al., 2007). However, it is important to recognise that routines have a local context, history and a distinct set of relations and do not constitute a universal best practice but need to respond to changing circumstances. Therefore, when companies are trying to take up new innovations, they need a novel repertoire of behaviours and routines. The assimilation of these new ways of working "is usually a stop-start process, progressing via a series of triggers and shocks and usually incurring set-backs and obstacles that must be overcome" (Van de Ven, et al., 1999).

In relation to environmental reporting, companies should aim to set up a reporting process that makes sense and contributes to deep learning within the organisation by creating and enforcing new routines for the implementation, diffusion and individual appropriation of the reporting tool, while at the same time ensuring that those do not conflict with existing routines. To create successful organisational routines, the first step would be to identify the responsible actors for the different activities that should take place. Since Alfa Laval is a very large company, there is a complex structure in place that consists of different employees, who execute various tasks. When discussing how they

collect data for environmental reporting within their Climate program, C.M. says the following:

> *"…since Alfa Laval is a huge company with all these businesses, we are a very decentralized organization, which means that we have three different divisions working with three different industries. So one for food and water, one for energy and one for marine. And underneath these divisions we usually have four or five business units, which are responsible for different product areas. So it could be heat exchangers and it can be separators, it could be pumping systems, so different types of systems that they're responsible for.*
>
> *And for each of these business units, I have one sustainability manager reporting into the program. I also have one sustainability manager from the supporting functions, which is global, which could be, global transportation, it can be, global sourcing, so these different types of supporting functions is also reporting into, into the program. So, I have around 25, 26 project managers that are reporting into the program. So it's my responsibility to make sure that everyone is aligned on how we are going to drive this program."*

Managing all the divisions of the company simultaneously is an impossible task, therefore, they have resolved to divide up the work in work streams depending on the kind of problem that needs to be addressed and if there are possible synergies between departments that can collaborate together to help each other achieve a common goal:

> *"Uh, so we work in different work streams like, you three, you work on this topic because this is where you are emitting the most and you need to figure out how to solve this problem. So yes, maybe you are working in different industries, but you're having the same problem. You are simply using too much steel, or you are reusing too little of the steel. Or you are traveling too much, you are transporting with air too much. So, we have these different focus areas and of course this is a dynamic picture, but we try to group people together and say, yes, you are in different industries, but at least you can collaborate on this topic.*

However, when separating diverse individuals to collaborate in distinct workstreams, it is still imperative to prevent isolation within their respective groups. Instead, fostering an environment conducive to open communication and facilitating the sharing of knowledge is highly valuable:

> *"…each business unit is actually owning their own carbon. So, they are responsible themselves for reducing the carbon footprint. But I would like to, or in the program we're trying to facilitate that we are working together. So not all 16 business units are reinventing the wheel over and over again. Because you might have a colleague over here that's also working on, buying too much steel, can we buy more recycled steel? Well, maybe you can come together instead of going out to the supplier yourself separately or in silos. So, um, it's very much about stakeholder management as well and maturing in the organization also. Making sure what kind of communication are we sending out there, which frequency, how often it needs to be these small tip talk clips so we make sure that people see them…"*

With regard to her own responsibilities, C.M. says the following:

> *So that's one part, facilitating that all of these people are working together and actually showing some progress, and then also making sure that they understand the regulation, the methodology, when to report, how to report, what is the definitions, what is our assumptions, all of these different things. I also need to be sure that they understand that part."*

When discussing organisational routines, it was said that they rely upon multiple actors, so it is worth establishing how many employees are necessary for the environmental reporting process**:**

> *But I, yeah, if when I'm saying thousand, then that means it's 5% of Alfa Laval. Those 5% are not working with it full time. But I, I think it's fair to say that 5% of the organization in some way touching the numbers. Maybe it's just pulling it out and sending it to someone, or aggregating some numbers uploading it. 5% is maybe not, and then, you know, some people are working with it full-time and some are working with it maybe every Friday afternoon and pulling the numbers out, or the last reporting date in a month or something. But yeah, 5% is maybe an okay estimate. But then of course, this is now when things are rolling. Yeah. It was something different when setting it up.*

The incorporation of digital solutions to streamline data collection methods can also simplify the process of environmental reporting:

> *"…we have a system where all employees are booking our business travels. So. in there it captures, okay, you're taking a flight from Stockholm to Paris or whatever. And then it comes with an average, okay, this distance with a flight is this CO2 that is emitting. And then we can extract the full year out of that system and then say, this is the emission that is coming from business."*

5.3.3 Flexibility, adaptability and upscaling

The last constraint relates to companies having to navigate environmental reporting in a dynamic manner, meaning that while they do have to stabilise indicators and routines, they also have to be able to evolve with the changing context both internally and externally (Baret & Helfrich, 2018).

C.M. discusses the need to ensure a level of agility in terms of implementing technologies and systems designed to respond to change, and that can incorporate swiftly customer feedback, new requirements and shifting priorities:

> *"That's also what I meant with the fact that you need to build something with flexibility in it. Because it's still on such a high level, then you could actually go a little bit to, to the right, but also a little bit to the left. And maybe in a year you would have to go back to the right"*

In technical terms, this could mean creating a digital platform that is designed to handle increases in load or capacity, and which is able to work seamlessly with other systems and analytical tools. With the rise of machine learning and AI algorithms, it is also important to consider how these could be used to reduce workload in terms of gathering and processing data for environmental reporting.

Furthermore, adaptability also relates to the ability of an organisation to promote effective communication and to enable contributions from employees:

> *"First of all, upscaling the organization because a lot of people really want to contribute. So how do I contribute? How do I give something to this program. And that's why we have set up these different work streams, so we know, okay, if you're coming with a request or an idea for business travel, we know where to go, these are the three business units that is working on it. And you can talk to them about it. They are already setting policies or, so we, right now the structuring with collaboration something new and something I have been implementing, so it's still, we are getting it up and running. Uh, but that's one thing. Now people know where to go, then it's about scaling up all the internal resources we have or people we have, uh, so that they actually start spotting the opportunities, "this is just stupid that we do this because we could actually save CO2 if we go with this, for example." Uh, so it's about upscaling our competences internally."*

By ensuring that information flows freely in the company and encouraging employees to reflect on the status quo, Alfa Laval can foster a work environment that values experimentation and stays open to new ideas, approaches, and improvements.

However, upscaling environmental efforts requires not only involvement from the employees but also from the management level:

> *"I think it's a management problem. Because a lot of, if you really want to do good sustainability, I do believe that it's sort of a bottom-up process. So all of the knowledge you need, the employees have. But sometimes that's sort of feeding that information to the management and even to the board. So they can make a good strategic decision. A long-term decision. It never gets there because the employees don't have the skills to sort of formulate something into a longer perspective. And the managers don't necessarily have the knowledge to ask the employees the right questions to get the right information. So I think there's a lot of this sort of not wanting to dedicate an employee to only work with sustainability as sort of an internal communication development role. I think that's what I would say because I do believe that most of the knowledge is actually in the companies."* (S.A.)

In this quote S.A. touches upon the challenge of establishing internal communication channels, when companies do not have the human resources allocated especially to environmental reporting. This makes it very difficult to create feedback mechanisms, where employees can provide input, and suggest improvement that can be used to iterate processes and strategies. Instead, companies might try to get away with taking a few select members of the team and adding on to their existing role the responsibility of environmental reporting:

"Um, so we have the course we're doing. Starting on Monday, they have eight employees and they're a company of, I think 250-ish people, but they only offered the course for people in one department. And that department is 32 people.

…it's a concrete manufacturer, they manufacture concrete walls. And it's the… technical drawers. So they're going do the production drawings.

This might be a good solution for the short term, as the newly trained employees can become ambassadors for environmental reporting within the company, however they will not be able to have a strategic overview of the entirety of company operations but will rather focus on their own set of activities:

"*And taking that and sort of personalizing it into the position they had at the company. So we had one that was in marketing and she did like a whole greenwashing, how can we provide more value to our customers with digital solutions that'll help prolong their lifespan. So she sort of bought into that aspect. And then we had another one who worked in product design. And he sort of tapped into the whole materials part of sustainability."*

For the environmental reporting process to remain adaptable, there also needs to be a clear commitment from top management to feed the lessons and newfound insights into their core business model and to signal a shift in priorities to stabilise the notion that environmental reporting matters:

"Then it is also something about maturing the organization, both from beneath but also from top, that, how should I say it? There are some KPIs that also need to mature. Let me say it like that, because they are still very traditional, when it comes to profit and sales. So right now we need to change the mindset so that you see this is not only going to be a cost, but it's actually our biggest opportunity to increase our business as well. Yes, it'll cost more, but we cannot not do it. Like in a couple of years, a customer will say, we will only buy a product that is recycled steel, for example. Okay. Then we need to have a product that is based on recycled steel. Um, so I think the maturity also from top and actually getting there where it's no longer just the buzzword, but where it's actually, also a mission…my bonus is also measured on my emission reduction and me getting the right products out there and transporting with truck instead of with flight or, so that you actually measure on it."

Lastly, C.M. elaborates that companies have to be vigilant and well-informed and should be prepared to frequently reassess their sustainability strategy and their reporting practices when necessary:

"*I think everyone has to do that almost on a daily basis. Because it's a moving target and, right now EU themself is so much up in the air, and if you read into the CSRD, it's details, so you have to, maybe not every day, but on a monthly basis really keep steering, okay, a little bit there. And now we got a new indicator of what will be added. I think all companies know that this is a moving target and especially the way setting up the reporting system, that's what I keep hearing when participating in different IT projects or, the IT project around CSRD, then we are actually building an IT landscape or IT system reporting system, but we don't really know the end goal*

yet. So, we need to build in a lot of flexibility in the system. So, I don't think that any company are able to have a fixed reporting strategy at the moment."

Companies have to implement environmental reporting, while also acknowledging the uncertainty of future developments. Consequently, this dictates the necessity of incorporating adaptability within the processes and systems employed, which can enable the organization to respond to regulatory changes and effectively integrate new research discoveries and technological advancements.

6 DISCUSSION

The purpose of this paper was to investigate *what kind of challenges companies in Denmark face when tackling the environmental aspects of corporate sustainability reporting.* In addressing my research question, I employed the theoretical framework proposed by Baret and Helfrich, which categorized the multifaceted constraints of the reporting process into three distinct dimensions: complexity and irreducibility of CSR, inherent stakes of non-financial reporting, and company expectations. I illustrated these categories with specific examples drawn from the interview data I gathered in the analysis chapter and in the table below is a summary of my findings:

Table 3 Results from analysis

CONSTRAINT	SPECIFIC CHALLENGES
Complexity	- Defining and understanding sustainability - Choosing what environmental indicators to prioritise - Selecting means for measuring and calculating the data
Irreducibility	- Environmental reports go beyond numbers - Some indicators are too complex to be precisely quantified - Condensing knowledge and skills into a brief learning program
Responsibilities towards stakeholders	- Reducing information asymmetry - Responding to external pressures - Understanding who needs what kind of information - Meeting diverse information needs of different stakeholders - Time and resources - Discrepancy between market dynamics and the law
Standardisation and coordination	- Uncertainty around significance and format of environmental reporting - Forming partnerships and consolidating conventions - Becoming overloaded with information requests - Lobbying and influencing policymakers
The quest for legitimacy	- Choosing a reporting framework - Ensuring transparent and reliable data - Acquiring certifications - Inadequate infrastructure for environmental certification - Possible risk of exclusion
Organisational learning and change	- Turning the reporting process into a tool for organisational learning - Training and educating staff on the fundamental principles - Recognising that their learning journey is ongoing - Lack of establishment of a knowledge network and course providers

	- Cost of training
Organisational routines	- New routines for the implementation, diffusion and appropriation of the reporting tool - Identifying the responsible actors - Fostering communication and facilitating knowledge share - Allocating the necessary human resources - Incorporating digital solutions
Flexibility, adaptability and upscaling	- Designing technologies and systems to respond to change - Encouraging reflections and contributions from employees - Commitment from managerial level - Managing uncertainty and moving targets

When comparing my results to a similar study – the case of the Italian large multiutility company Estra (see chapter 3.1.) - published 3 years ago, I found some notable differences. In the case of, Estra, the researchers were able to carry out a five-year longitudinal study, which allowed them to analyse the challenges and related mechanisms characterizing the implementation of sustainability reporting since the initial stages (Micco, et al., 2020). Moreover, in addition to conducting interviews with managers, employees, and the sustainability team, they also distributed questionnaires to 32 Estra employees to gather data. Their approach offered the advantage of enabling them to observe the challenges that emerged at different stages of implementation and establish causal connections between triggers, challenges, and solutions.

For instance, they were able to link the introduction of new legislation to Estra's increased adherence and more rigorous adoption of the GRI standards. Another example involved their observation that interaction with the audit firm resulted in significant improvements in data processing and quality, including the use of full-time equivalent methodology and the differentiation of GHGs into direct emissions (Scope 1) and indirect emissions (Scope 2). Thirdly, they noted a heightened awareness of sustainability reporting as more than just an administrative task following the NFRD period. Nonetheless, their questionnaire revealed that 81.25% of respondents confirmed a disparity in the perceived importance of financial and sustainability reporting. Hence, their research concluded that legislation influenced both the scope and quality of disclosed information and encouraged the standardization of the reporting procedure.

In contrast, the results from my research show that while legislation is driving a lot of change in environmental reporting, the pressure from the value chain is exerting at this moment an even stronger influence on the desire to engage in environmental reporting activities. What is more, legislation is proving to be a bit slow in providing a global solution for the standardisation of CSR, which has led to the emergence of "a variety of smaller-scale transnational cooperative arrangements" (Stewart, et al., 2013, p. 1). These voluntary non-state climate initiatives (such as the SBTi, CDP, GHG protocol and others) are currently filling in important regulatory gaps, even though their success still relies on overarching nation-state policy in the long run (Hickmann, 2017, p. 94) Furthermore, in the Italian case, the company dealt with the need for training on reporting matters by hiring a PhD student, who became part of the internal sustainability team and steered a lot of the learning and innovation processes. However, because of my interview with act2learn, I was able to note a scarcity of local training providers and specialized

knowledge institutions in the Danish context, which is causing some companies to struggle in acquiring the essential competencies.

Regarding similarities, my research and the Estra case both indicated that the effective response to related challenges involved the implementation of mechanisms such as dissemination, employee engagement, managerial dedication, and the establishment of routine or institutionalized reporting practices.

It is important to note that this research does not claim to comprehensively cover all the diverse challenges that companies may encounter during the reporting process. To begin with, my data collection focused solely on the Climate Program manager at Alfa Laval, capturing her unique perspective on the company's challenges. While her insights have provided a valuable overview of the primary difficulties on an organisational level, it does not rule out the possibility of other issues arising on team or individual level within different departments. I was also not able to interview the person in charge of the Circularity Program, as previously stated, which I also consider an important gap as it could have revealed additional challenges and perspectives.

Furthermore, it could be argued the size of Alfa Laval as an economic force also has an impact on the type of situations, they are facing that would differ from that of a small or medium sized company. The company has already invested substantial resources in environmental reporting and, in many respects, can be considered ahead of the curve e.g., they have gained certifications and access to collaborative platforms. To counterbalance that, the interview with act2learn focuses predominantly on SMEs and gives many real-life stories that supplement the narrative and offer the perspective of smaller market players.

Additionally, it's essential to note that the data represents a specific point in time and may not capture all potential challenges that might have emerged previously or subsequently. My interviews with Alfa Laval and act2learn were in the period between February and July 2023 and given the changing landscape of sustainable development, new insights or differences in results may be observed in the time after this.

For instance, since I started writing the project there have been new developments in relation to the Corporate Sustainability Reporting Directive. After some public consultations and deliberations, the president of the European Commission has supported the reduction of reporting requirements by 25% and the postponement of reporting deadlines envisaged by the CSRD, in line with the strategy to boost the EU's long-term competitiveness and to provide relief for SMEs (Directorate-General for Financial Stability, Financial Services and Capital Markets Union, 2023). Additionally, on 31 July 2023 the Commission also released the long-awaited European Sustainability Reporting Standards (ESRS) for use by all companies subject to CSRD (EC, 2023). The new standards will include cross-cutting standards, topical standards (Environmental, Social and Governance standards), and sector-specific standards. The ESRS seem to feature an increased requirement for irreducible qualitative data, such as describing processes to identify impacts, risks and opportunities, and identifying how strategy and business model interact with its material impacts, risks and opportunities (European Commission, 2023). The provision of these standards is bound to address major gaps in regulation and

standardisation of the reporting process, but nonetheless, new requirements and terminology will take time to be understood and correctly applied by the businesses that fall under the scope of the regulation.

7 CONCLUSION AND PERSPECTIVES

This project explored the diverse challenges companies in Denmark face when tackling the environmental aspects of corporate sustainability reporting. By using a qualitative approach guided by the interpretative tradition of hermeneutics, I employed the case study method and gathered rich context-specific information from my interviews with Alfa Laval, supplemented by the conversation with act2learn. The theoretical framework of Baret and Helfrich then dissected the complex dimensions of environmental sustainability reporting and guided the analysis of the accumulated data to spotlight crucial insights and findings.

By compiling and analysing gathered data I was able to identify a multitude of difficulties companies encounter in environmental reporting. These include the complexities of defining and understanding environmental indicators, as well as tackling the qualitative and quantitative aspects of the required data. Managing external pressures and meeting diverse stakeholder information needs while navigating regulatory and market dynamics are also major hurdles. Additionally, they have to train and educate staff on reporting principles, foster continuous organizational learning, and develop new organisational routines. Boosting managerial commitment and navigating through uncertainties further compound these challenges. Ultimately, companies must allocate diverse resources, embrace digital solutions, and create effective communication and knowledge-sharing mechanisms to successfully tackle these issues.

The results of my research have practical applications for various stakeholders in the reporting ecosystem. Government authorities can use my findings to pinpoint regulatory and knowledge gaps, enabling them to refine regulations and support businesses in their reporting efforts more effectively. For companies, my research serves as a valuable tool to identify potential risks on their reporting journey. It offers valuable information about areas where they might face difficulties or deficiencies in their reporting procedures. Armed with understanding, organizations can take proactive steps to address these issues and enhance the quality and trustworthiness of their reports.

Furthermore, my research is beneficial for other participants in the reporting ecosystem, including consulting firms, educational institutions, and industry associations. These organizations offer services and support to businesses engaged in reporting. By leveraging the insights from my research, they can align their offerings with the specific needs and challenges faced by companies. This ensures that the services and knowledge they provide are well-matched to the evolving reporting landscape, ultimately benefiting the wider reporting community and contributing to more robust and purposeful environmental reporting practices.

Reflecting on the insights gained from this project, if I were to revisit the topic in the future, my approach would entail several enhancements. Firstly, I would expand the

scope of interviews to include more employees from Alfa Laval such as sustainability managers from different business units, top executive management and others involved in collecting numbers for the reports. Secondly, I would want to carry out field studies to observe the daily work routines involving environmental reporting to collect first-hand impressions of these processes. Thirdly, I would form hypothesis based on these more detailed observations and formulate a questionnaire to send out to other companies to detect patterns and overlaps in constraints.

With these alterations in mind and insights form the discussion chapter, several promising avenues for future research can be explored:

- **How do the day-to-day challenges of environmental sustainability reporting within a company, exemplified by Alfa Laval, evolve and manifest over the course of a reporting year?**
  A longitudinal study, spanning a full reporting year, centred around a company such as Alfa Laval, which includes observations and interviews with staff members in different positions, would provide a unique opportunity to delve into the day-to-day challenges faced by various teams and individuals. This extended engagement could yield in-depth knowledge and uncover varied perspectives of practical hurdles.

- **What recurrent themes, strategies, and challenges in environmental sustainability reporting emerge across a diverse spectrum of companies?**
  Formulating hypotheses based on the findings of this research and subjecting them to testing across a range of companies could offer a comparative perspective. This approach might highlight recurrent themes, effective strategies, and areas necessitating improvement within the environmental reporting landscape.

- **How do companies assimilate and implement the new European Sustainability Reporting Standards, and what is the impact of these standards on their environmental reporting methodologies?**
  Given the dynamic nature of sustainability reporting, there is significant potential in examining the adoption and application of the new European Sustainability Reporting Standards. Investigating how these standards are assimilated and put into practice by companies would reveal whether they are able to alleviate some of the challenges incurred by sustainability reporting.

These research avenues hold the promise of advancing the comprehension of environmental reporting challenges and the evolving standards that shape the landscape of corporate sustainability.

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APPENDICES

Appendix A

Alfa Laval Interview Questions – First Interview

1. Could you please tell me about the climate program at Alpha Laval and what you're working with?
2. I was wondering what your main tasks and responsibilities are as the climate program manager, if you can tell me about that.
3. I also wanted to ask you, what are the biggest challenges that the company is facing in relation to achieving the climate goals it has set out?
4. Do the suppliers that you use, do you find that they often have the data about, for example, how much CO2 is produced when they take the material, refine the ores, or something like that?
5. When you measure the emissions in scope one and two, do you also account, for example, for the employees commuting to the different sites of the factories where you have production? Or for example, business travel as well?
6. What other mobilities are included in scope 1?
7. Do you have the need to employ external consultants or maybe also get support for the company's sustainability efforts?
8. And in terms of the new corporate sustainability reporting directive, does Alpha Laval need to adapt to its new requirements or change anything in its procedures?
9. In this new reporting directive, they have something called double materiality, which is on one hand how does the company affect the environment around it, but also how the environment and the changing climate could potentially affect the company. And that's something that is a little bit different, for example, from the previous non-financial reporting directive. So, it's really a lot more focus on sustainability and specifically on the environment factors. And is that something, you're already doing as well?

Appendix B

Act2learn UCN - Interview Guide

General information

1. Could you tell me broadly about the work you do here at UCN?
2. What are your main responsibilities and tasks?
3. Could you elaborate further on the adult education programs UCN provides?
4. Who are they for? What are main objectives of such programmes?
5. What do they consist of (e.g. online courses, practical assignments, etc.)?
6. What kinds of topics do they cover?

Sustainability course – content and learning goals

7. You mentioned before that you are currently working on a course that will cover sustainability reporting. Can you tell me more about that?

8. What topics will the course include?
9. How did you decide on which themes are relevant to be included?
10. Who is the course for?
11. Do you know what their expectations are in terms of learning goals?
12. How do you know that?

Companies' motivation for pursuing sustainability-related courses

13. Did the companies reach out to you to ask for such courses?
14. Did they say why they need such courses?
15. Also, did they request specific topics or skills to be addressed in the programme?

Profile and characteristics of companies

16. Can you tell me more about the companies that have reached out?
17. Which sectors do they operate in?
18. Approximately how large are they?
19. How many of their employees did they want to provide training for?
20. Do they have to allocate resources for these courses?
21. Do companies from different sectors have different expectations from this course?

Appendix C

Alfa Laval Interview Questions – Second Interview

Sustainability attitudes and perspectives

1. Does the company have its own definition for corporate sustainability or sustainable development?
2. Do you know what was the initial motivation behind the decision to start producing sustainability reports?

Reporting procedures and their intrinsic challenges

3. Do you follow any particular framework for writing your sustainability report? Why / why not? For example, Global Reporting Initiative?
4. Did you have to get any specific certifications in relation to sustainability reporting? How did you get advice on which ones are most suitable for you?
5. What kinds of tools or programs do you use for measuring and calculating carbon emissions and other environmental impacts and more importantly, why did you choose those specific ones?
6. Do you have a complete list of all the environmental indicators you use in your report?
7. Do you find that you need to use industry specific methods and approaches for sustainability reporting? How do you get guidance on that?
8. Do you find that you often have to revisit your sustainability reporting strategy and rethink certain processes?

Knowledge resources and human capital

9. How do you go about training employees in regard to sustainability matters, specifically people working within the sustainability program?
10. Does it happen that you still have to acquire some internal expertise? And if so, are employees sent out for training or do you hire external experts?

11. Does the company put aside resources for further research into sustainability and how to improve upon the existing practices of the company?
12. Do you have an estimate of the time and human resources used on sustainability reporting? Perhaps number of full-time employees working with sustainability?
13. Are there any other costs in relation to sustainability reports? Science-based target initiative?

Communication with stakeholders

14. How do you disseminate information about your sustainability efforts?
15. Who are the users of the reports you publish?
16. How do you know that?
17. Do you use these reports as a means of communication with stakeholders?

Reflections on legislation and on company efforts

18. Do you think the sustainability reporting generates value for the company? How?
19. What are some of the benefits and disadvantages of sustainability reporting legislation in your opinion? How do you think current legislation should improve?
20. In your opinion, what opportunities for development does the company have in relation to sustainability reporting? What could you do better?

Appendix D

DANISH COMMITTEE ON CORPORATE GOVERNANCE

5. Februar 2021

Response to the public consultation on the European Commission's upcoming initiative on Sustainable Corporate Governance

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The Danish Committee on Corporate Governance would like to thank the European Commission for the opportunity to contribute with the Committee's views on the upcoming proposal on Sustainable Corporate Governance.

The Committee fully supports the European Commission's sustainability agenda and the involvement of stakeholders' interests in a broader sense. However, in the Committee's view this is not achieved by a proposal on EU regulation of corporate governance but should be incorporated in soft law instead. This point of view is elaborated in the following.

Mandatory due diligence and corporate governance are two very different sets of regulations, and the Committee recommends the European Commission to treat the two sets of regulation separately, as they have very different consequences including regulatory, economic, competitive and practical implications. Moreover, any regulatory initiative regarding corporate governance should await a sufficient impact assessment which in the Committee's view has not yet been provided.

The European Commission's consultation regarding corporate governance is based on the wrongful conclusions from the EY report "Study on directors' duties and sustainable corporate governance". Thus, the European Commission bases its upcoming proposal on the highly criticized conclusions from this report, including especially the conclusions that the increase in the companies' dividends and share buybacks are a sign of short-termism. The Committee finds this criticisable as a reduction in the companies' opportunities to use such tools in reallocating capital will to a large extent also reduce the effectiveness of the Capital Markets Union and reduce the attractiveness of European listed companies to international investors. Therefore, the Committee has decided not to fill in the questionnaire as the questions presented are biased and the Committee finds it difficult to answer the questions in a complete manner.

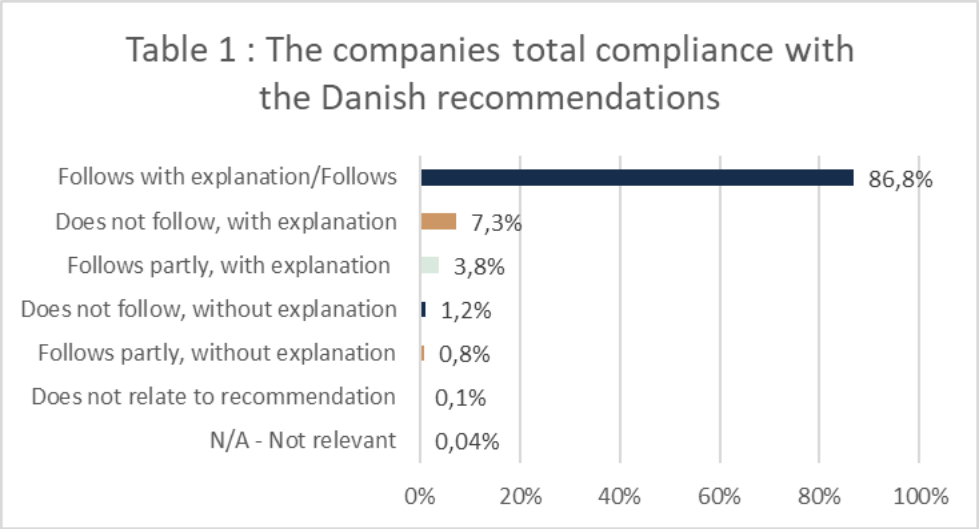
Need and objectives for EU intervention on sustainable corporate governance
The Committee finds no need for regulation at EU-level on this matter as it should build on already existing guidelines, such as e.g. OECD' guidelines for multinational enterprises, UN's guiding principles on business and human rights, the ILO Tripartite Declaration of Principles concerning MNEs and Social Policy, and other relevant guidelines. In this regard,

it is important that emphasis is put on processes rather than results. Moreover, industry-specific guidelines can be considered.

In the latest update of the Danish Recommendations on Corporate Governance in December 2020, "company's purpose" was introduced as a new term. A company's purpose is the company's overall aim for long-term value creation, which the company delivers to its shareholders, other stakeholders and society. In order to support the company's statutory objects pursuant to its articles of association, the company's board of directors should consider the company's purpose. The Committee considers the company's purpose to be a considerable driving force in the company's strategy and decision-making processes. In addition, "sustainability" is another new term in the recommendations, the term "corporate social responsibility" has been part of the recommendations for several years. The sustainability of a company includes e.g. the company's economic, financial and innovative sustainability and sustainability in relation to the concepts Corporate Social Responsibility ("CSR"), Environment, Social and Governance ("ESG") and the company's role as a positive contributor to society as a whole. It is essential for the companies' value creation that companies consider sustainability in a broad sense, i.e. not only in the sense of economic sustainability, but also, for instance, by looking at environmental, employee and social society sustainability.

Danish listed companies have a very high degree of compliance with the Danish Recommendations on Corporate Governance (version of November 2017). The percentage of recommendations that is complied with is 97,9 % which is published in the Committee's latest annual report 2019-2020. See table 1[1] below. This indicates that Danish listed companies will work seriously and effectively with the agenda of sustainability in case further recommendations from the European Commission would be introduced in this area. However, in addition to Danish listed companies, we note that other corporate entities e.g. state-owned companies, corporate entities with a special public interest, corporate entities owned privately or by commercial foundations also draw inspiration from the Committee's Recommendations when setting their own corporate governance standards.

[1] Source: The Danish Committee on Corporate Governance' annual report 2019-2020: https://corporategovernance.dk/analyser-og-aarsrapporter



The Committee notes that Danish listed companies are involving their stakeholders already, including dialog with relevant NGO's, such as e.g. WWF. The management should have flexibility to involve only the relevant stakeholders for the companies. This supports corporate governance codes based on soft law.

Directors' duty of care – stakeholders' interests

The Committee finds it necessary to distinguish between director's duty of care and stakeholders' interests. The Committee agrees that the stakeholders, such as for example shareholders, employees (including employees in the company's supply chain), customers, persons and communities affected by operations of the company and the company's supply chain, local and global natural environment, including climate etc. are relevant for the long-term success and resilience of the company. Danish listed companies do already take these stakeholders' interests into consideration today.

In total 109 Danish listed (large cap, mid cap, and small cap) companies (including companies de-listed or merged during 2020) report voluntarily on ESG metrics to Nasdaq Copenhagen A/S (Nasdaq). The reporting includes i.a. incentivized pay based on ESG KPI's, Supplier code of conduct, Data Privacy Policy, Sustainability Report, Child and forced labor policy, Human rights policy, Ethics and anticorruption code. The high percentage of ESG-reporting companies stated in table 2 shows that Danish listed companies are working actively with ESG matters including relevant stakeholders' interests.

Table 2: Danish listed companies reporting on ESG metrics[2]

	Number of Danish companies reporting ESG to Nasdaq	% of total number of Danish companies reporting ESG to Nasdaq out of all Danish listed companies
Large Cap (Market Value above 1 billion Euro)	39	100%
Mid Cap (Market Value between 150 million Euro and 1 billion Euro)	28	90%
Small Cap (Market Value below 150 million Euro)	38	68%

The Committee believes that introduction of further hard law in areas such as the composition of the management, management's ability to manage the company, liability of the management etc. will remove both shareholders' and the management's flexibility to develop the company in the best possible way, to make the necessary decisions and take into account the relevant stakeholders' interests. Regulating how companies should take stakeholders' interests into account will i.a. lead to a general increase in the circle of litigants entitled to sue the company e.g. NGO's, which may have a deterrent effect on potential, qualified management members to accept management positions in fear of lawsuits, forcing the companies to increase the remuneration for the management. Access for the companies to venture capital would weaken, as well as a reduction in the competitive position in general for the companies in EU. Moreover, regulation at EU-level will diminish the level playing field between companies in EU and companies in third countries, including UK.

More emphasis should be put on the Member States' corporate governance codes. Moreover, it should be included in corporate governance codes that companies should consider to set up sustainability committees under the board of directors to ensure that sustainability competencies are at place in the boards and the sustainability agenda is anchored at board level.

Corporate Knights' 2020 Global 100 ranking on the world's most sustainable corporations shows that European companies, including especially Danish companies, already are front runners on the sustainability agenda.

[2] Source: Nasdaq ESG Data Portal: https://www.nasdaq.com/sustainability/offerings/ESG-Data-Portal. Please note that the companies ESG-reporting follows the "comply or explain"-approach.

Table 3: Extracts of Corporate Knights' 2020 Global 100 ranking on the world's most sustainable corporations[3]

Rank 2020	Company	Peer Group	Country	Overall Score
1	**Orsted A/S**	**Wholesale Power**	**Denmark**	**85%**
2	**Chr. Hansen Holding A/S**	**Food and other chemical agents**	**Denmark**	**84%**
3	Neste Oyj	Petroleum Refineries	Finland	84%
4	Cisco Systems Inc	Communications Equipment	United States	84%
5	Autodesk Inc	Software	United States	83%
6	**Novozymes A/S**	**Specialty and Performance Chemicals**	**Denmark**	**83%**
7	ING Groep NV	Banks	Netherlands	83%
8	Enel SpA	Wholesale Power	Italy	82%
9	Banco do Brasil SA	Banks	Brazil	82%
10	Algonquin Power & Utilities Corp	Electric Utilities	Canada	81%

Due diligence duty

The due diligence duty should be kept as a matter of soft law, and reference should be made to international recognised guidelines within the area such as OECD guidelines for multinational enterprises etc. Focus in this regard should as mentioned above be on processes and transparency rather than on results. To ensure a level playing field, regulation should include large companies (e.g. over 500 employees), both listed and non-listed companies, but it is important that especially SME's and micro-enterprises are not met with new burdensome requirements. However, exposing more companies domiciled in third countries but operating in EU to disclose information on environmental, social, human rights and anti-corruption matters according to the EU Non-Financial Reporting Directive (NFRD) could also be a solution.

The Committee reminds the European Commission that already ongoing and newly implemented initiatives are set out to solve the sustainability issue. That is e.g. NFRD, Disclosure Regulation, Taxonomy Regulation, Shareholder Rights Directive II (SRD II) and the principles for better regulation. Any further initiatives should await the effect of these initiatives.

The Committee recommends that employee representation at the Board of Directors level in large companies is given a more prominent role as it is a good way for this group of stakeholders to gain influence in a company.

[3] Source: Corporate Knights' 2020 Global 100 ranking on the world's most sustainable corporations: https://www.corporateknights.com/reports/2020-global-100/2020-global-100-ranking-15795648/

Other elements of sustainable corporate governance

The proposed initiatives regarding remuneration are in the view of the Committee best regulated in soft law. This is supported by experience's in Denmark with i.e. the Danish Recommendations on Corporate Governance. The regulation today applies only to Danish listed companies and further regulation of listed companies will create a large gap between regulation of listed and non-listed companies, including corporate entities owned privately or by commercial foundations. Consequently, it will be less attractive for companies to raise capital on the stock exchange, and go against the purpose of the Capital Market Union. Regulation on remuneration should await the effect of the newly implemented SRD II. An alternative to a legislative approach could be to a Commission Recommendation on sustainability, which can be implemented into the Member States' corporate governance codes.

Final remarks

In summary, the Committee supports the European Commission's sustainable agenda, but disagrees on which instruments should be used to achieve the goals set out. The Committee strongly encourages the European Commission to be reluctant with a proposal on legislation but instead await the effects of ongoing and newly implemented initiatives and introduce possible new measures trough soft law.

The Danish Committee on Corporate Governance remains at your disposal for further contribution in the process, especially contributing with ideas on how to implement initiatives on sustainable corporate governance in soft law, including in corporate governance codes.

The Danish Committee on Corporate Governance