

LAPPEENRANTA UNIVERSITY OF TECHNOLOGY  
LUT School of Energy Systems  
Sustainability Science and Solutions

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**EXECUTION OF BUSINESS SUSTAINABILITY IN STORA  
ENSO CONSUMER BOARD DIVISION THROUGH THE NET  
POSITIVE INITIATIVE**

Examiners:

Professor Lassi Linnanen

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Senior Manager in Sustainability Juha Oksanen

## **ABSTRACT**

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### **Execution of Business Sustainability in Stora Enso Consumer Board Division through the Net Positive Initiative**

Master's Thesis

2018

82 pages, 9 figures, 11 tables, 8 appendices

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   Associate Professor Mirja Mikkilä  
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This Master's Thesis examines the execution of net positive contributions inside a global commercial organization. The aim is to conceptualize what the Net Positive initiative associated to true business sustainability really means in the paperboard industry and what kind of actions could result in Net Positive contributions.

The research was carried out as a qualitative research by connecting literature-based findings to the operations and processes of a select division in the target organization. Sustainability criteria derived from the literature were compared to the division's sustainability framework to identify development areas. The aim of the gap analysis was to provide suggestions to improve the divisional sustainability agenda in line with the Net Positive business sustainability frame.

The results of the research indicate that due to the ambiguousness of the different sustainability theories, scaling up sustainability commitments of organizations can be challenging. This is due to the fact that there lacks a common consensus on what to measure in terms of sustainability. The results also show that only by shifting the organizational focus from purely financial goals towards contributing to the most pressing sustainability challenges a business can execute efficient corporate sustainability. However, fundamental re-structuring of existing business models is very challenging for organizations. Nevertheless, companies are more and more seen to have a responsibility to contribute to solving the global sustainability challenges.

# TIIVISTELMÄ

Lappeenrannan teknillinen yliopisto  
LUT School of Energy Systems  
Ympäristötekniikan koulutusohjelma

Erkko Saarinen

## **Execution of Business Sustainability in Stora Enso Consumer Board Division through the Net Positive Initiative**

Diplomityö

2018

82 sivua, 9 kuvaa, 11 taulukkoa ja 8 liitettä

Tarkastajat: Professori Lassi Linnanen  
Tutkijaopettaja Mirja Mikkilä  
Senior Manager in Sustainability Juha Oksanen

Hakusanat: Net Positive, nettopositiivisuus, kestävä kehitys, yritysvastuu, kestävän kehityksen yritys

Tässä diplomityössä tutkittiin nettopositiivisuus kontribuutioita globaalissa kaupallisessa yrityksessä. Työn tavoitteena oli käsitteellistää, mitä vahva yritysvastuu ja siihen liitetty Net Positive liike merkitsee kartonkiteollisuudessa. Tämän lisäksi työn tavoitteena oli tuoda esille eri yritysvastuuseen liittyviä nettopositiivisuus mahdollisuuksia ja panoksia kyseisessä liiketoiminnassa.

Työ toteutettiin kvalitatiivisena tutkimuksena, jossa kirjallisuuden havaintoja yhdistettiin kohdeorganisaatiosta valitun divisioonan yritysvastuu toimintoihin ja tavoitteisiin. Kirjallisuuden tarjoamien kestävän kehityksen kriteerien ja taulukoiden avulla arvioitiin divisioonan yritysvastuun tavoitteita ja päämääriä. Täten työssä voitiin toteuttaa puuteanalyysi kyseisten divisioonan tavoitteiden osalta.

Keskeisimmät tulokset osoittavat, että useiden eri kestävän kehityksen taustateorioiden vuoksi vastuullisuuden mittaaminen ja arvioiminen ovat vaikeaa ja tulkinnanvaraista. Tulokset osoittavat myös, että ollakseen vahva ja aidosti kestävän kehityksen harjoittaja organisaation on siirrettävä näkökulmaa liiketoiminnasta ja tuoton maksimoimisesta kestävän kehityksen maailmanlaajuisiin ongelmakohtiin. Täten organisaatio voi luoda merkittäviä vaikutuksia ja erottua muista yrityksistä. Kyseinen näkökulman muutos on haasteellista olemassa oleville yrityksille. Silti nykymaailmassa sidosryhmät vaativat kasvavissa määrin, että yritysten on myös annettava panoksensa kestävän kehityksen edistämiseksi.

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Lappeenranta, June 15, 2018

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## LIST OF ABBREVIATIONS

ACE	Association of Beverage Cartons and Environment
BAU	Business-As-Usual
BST	Business Sustainability
CB	Consumer Board
CEPI	Confederation of European Paper Industries
CS	Corporate Sustainability
CSR	Corporate Social Responsibility
EM	Environmental Management
EU	European Union
FFIF	Finnish Forest Industry Association
FSC	Forest Stewardship Council
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
IFC	International Finance Corporation
ISO	International Organization for Standardization
IPCC	Intergovernmental Panel on Climate Change
LCA	Life Cycle Assessment
MFC	Micro Fibrillated Cellulose
NGO	Non-Governmental Organizations
NP	Net Positive
NPG	Net Positive Group
OECD	Organisation for Economic Cooperation and Development
OHSAS	Occupational Health and Safety Assessment Series
PAS	Publicly Available Specification
PEFC	Programme for the Endorsement of Forest Certification Schemes
ROI	Return on Investment
SD	Sustainable Development
SDGs	Sustainable Development Goals
SE	Stora Enso

SEDEX	Supplier Ethical Data Exchange
TCS	Total Contribution to Society
UN	United Nations

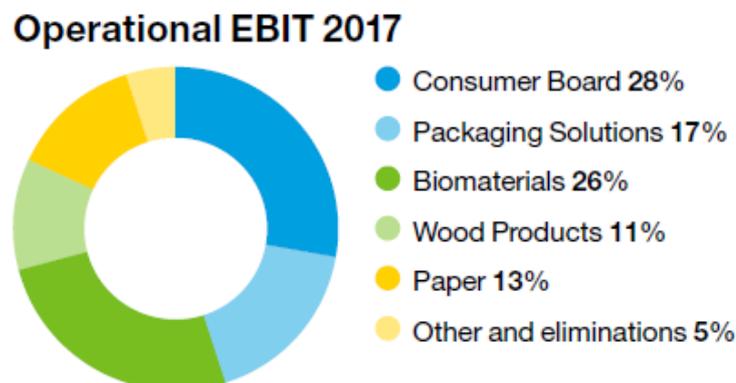
# 1 INTRODUCTION

## 1.1 Background of the study and target organization

Stora Enso Oyj is a multinational renewable materials company operating in the wood products and forest industry. In 2017, Stora Enso's sales totaled 10 billion euros making it third in the world amongst pulp and paper industry companies (Stora Enso Progress Book 2017, 5; Forbes 2016).

Stora Enso is a leading provider of renewable solutions in biomaterials, packaging, wooden constructions as well as in paper products (Stora Enso Progress Book 2017, 6). Annual production capacity of the company is 1.4 billion square meters of corrugated packaging, 10.1 million tons of paper and board, 5.9 million tons of chemical pulp and 5.6 million cubic meters of sawn wood products (Stora Enso Facts and Figures 2017).

The Stora Enso consists of five different divisions with specific areas of businesses. These divisions are Consumer Board, Packaging Solutions, Biomaterials, Wood Products, and finally the Paper. Share of operational EBIT in 2017 of these divisions are presented in the figure 1. Due to the different fields of specialization the customers of Stora Enso vary from publishers to converters and even to construction companies. (Stora Enso Progress Book 2017, 5; Stora Enso Our Businesses 2017.)



**Figure 1.** Division shares of operational EBIT in 2016 (Stora Enso Facts and Figures 2017).

The world is facing many global challenges, climate change and global warming being some of the biggest concerns. The vision of Stora Enso is to replace fossil-based materials by low-carbon renewable materials in order to contribute to the development of bio-economy (Stora Enso Progress Book 2017, 2). The thriving vision, the Purpose of Stora Enso is “Do good for people and the planet. Replace fossil-based materials with renewable solutions” well describes the company’s ambitions. Stora Enso’s Values “Lead” and “Do What’s Right” support the vision by aiming to set example and being proactive on all aspects of the business, including sustainability. (Stora Enso Progress Book 2017, 17.)

Since the introduction of Stora Enso Sustainability Agenda in 2014, the Stora Enso’s divisions have been following a framework of ten focus area to align their sustainability strategies with the Group-level focus. Today, all the Consumer Board Division’s production sites are fully compliant with the ISO 9001, ISO 14001 and OHSAS 18001 standards. Additionally, the sites have the Forest Stewardship Council (FSC) certification as well as the Programme for the Endorsement of Forest Certification (PEFC) certificate. (Stora Enso Certificates 2017.) Nevertheless, the continuing commitment to sustainable matters require constant development inside the organization. The key customer preferences on environmental issues need to be addressed simultaneously with the environmental legislation and policies. Thus, Stora Enso is committed to constantly develop the organization for a more sustainable future.

## **1.2 Stora Enso Division Consumer Board**

The Consumer Board Division produces and develops consumer packaging boards ranging from typical folding boxboard to cigarette board and to liquid packaging board. Based on the needs of the customer, the carton boards can be used for various printing and packaging applications such as beverage, food, pharmaceutical and luxury good packages (Stora Enso Progress Book 2017, 3). Since food safety is a growing concern with consumers, Stora Enso wants to be the safest and most reliable high-quality supplier in the food packaging segment.

Most of Stora Enso's operational facilities are located in Europe. Currently, the Consumer Board Division has five operating mills in Finland, Sweden and in China. Due to the rather strong foundation of Stora Enso in the Europe and the anticipated rise in demand of consumer packaging board in Asia Pacific, Stora Enso's new consumer board machine was successfully ramped up in Beihai, China in May 2016 (Stora Enso Progress Book 2017, 30). The other four consumer packaging board mills operate in Imatra and Ingerois, Finland and in Fors and Skoghall, Sweden.

Stora Enso continuously seeks opportunities to pursue concrete actions to fulfil the Purpose of the company. The Consumer Board Division is constantly working to innovate and develop new efficient, renewable solutions to meet the needs of its consumers (Stora Enso Progress Book 2016, 26). Additionally, the company does not only aim to comply with the legislation and regulations, but also seeks to go beyond compliance to enhance the sustainability performance and operations of Stora Enso. (Stora Enso Sustainability Strategy 2017.) Thus, the Net Positive Initiative, a voluntary framework for more sustainable business, has gained interest within Stora Enso Consumer Board and also amongst some of its key customers.

### **1.3 The Net Positive Initiative**

The Net Positive Initiative was founded by the Forum of the Future in 2013 to create a collaboration network, a Net Positive Group (NPG), of different organizations with a common mindset to put in more good to the environment, society and the economy than what is taken out. From the early start, the NPG consisted of Ikea, Pepsico, Dell, TUI Group, Kingfisher, SKF, BT, Capgemini, The Crown Estate and Great Manchester Fire and Rescue. (Forum for the Future 2017) Presently, the NPG has eleven member companies.

The traditional way of implementing corporate social responsibility (CSR) has focused on measuring the environmental and social impacts of a business and hence improving the overall performance, responding to stakeholders' expectations as well as simultaneously adding corporate value (Benn & Bolton 2011, 52, 56). The aim of the Net Positive Initiative

is to update and modify the learnt perception of CSR and fuse a new way of doing business into the traditional business models. According to the Net Positive Group (2014, 6), organization should not only aim to minimize the harms, but thrive to have a positive impact throughout the value chain, to the society and the natural world.

The vision of the Net Positive Initiative is echoing the concepts of corporate social responsibility (CSR), corporate sustainability (CS), environmental management (EM) and the true business sustainability (BST). The concept of true business sustainability has been presented by Dyllick and Muff (2015) in their article where they ponder the extent of an organization having truly sustainable commitments. The mutual vision of Net Positive Initiative and the true business sustainability is to channel the organization's competencies, resources and knowledge in a way that they create significant positive impacts for the society and the planet. This study will discuss these aspects in detail and debate the concerns arising from the Net Positive Initiative.

## **1.4 Research Design**

### **1.4.1 Previous Studies on Stora Enso Sustainability**

Jonas Garemark, Bjork Ulfarsdottir and Johanna Ewertzh conducted a study of Total Contribution to Society (TCS) in 2017. The objective was to evaluate existing TCS methodologies in different corporations in order to bring valuable information to Stora Enso on how the corporation could evolve in this field. The study identifies the strengths and weaknesses of different methodologies used and sums up the related characteristics and tools. According to the authors, another Net Positive Initiative member, The Crown Estate, showcases most comprehensive TCS methodology towards which Stora Enso should align its ambitions for in the long-term. However, before that the organization needs to gradually build environmental data and achieve reasonable assurance on different areas of the Stora Enso Sustainability Agenda. (Garemark et al. 2017, 1, 24-25.)

### 1.4.2 Objectives of the study

The outcome of the Garemark et al.'s (2017) study can be interpreted in a way that Stora Enso currently lacks adequate metrics and sustainability data gathering methodologies to be able to apply the total contribution methodology. The main objective of this thesis is to build a roadmap for the Stora Enso Consumer Board Division, propose metrics and measurement tools derived from the concept of emerging sustainability initiative, Net Positive, and evaluate the challenges of the Initiative.

The thesis studies the concept of true business sustainability, how it is defined in the literature and what would the concept truly mean in the cartonboard industry, more specifically for Stora Enso Consumer Board. Additionally, metrics and measurement tools offered by the Net Positive Initiative will be evaluated in accordance with the business sustainability theory discussed in the thesis. In addition to the Net Positive Initiative metrics, the most suitable sustainability measurement tools will be evaluated for the Consumer Board Division. Hence, one of the aims of the study is to develop a measurement framework for the so called "business sustainability 3.0" metrics and define the steps for a business like Stora Enso and its Consumer Board Division, to become truly sustainable within this criteria.

The purpose of the thesis is to study how plausible the Net Positive Project's principles are for implementation in the Stora Enso Consumer Board Division. An emphasis will be on determining of the value add through implementing the Net Positive Initiative framework.

The research questions of the thesis are:

- What true business sustainability actually means and can we consider Net Positive to be a continuum for business sustainability 3.0?
- What are the boundary conditions for Consumer Board Division to consider having positive impact on the environment, society, economy?
- How can the ambiguous Net Positive Initiative metrics be used in the cartonboard business?
- What concrete example cases can Stora Enso Consumer Board present in terms of Net Positive?

The results of the research shall disclose the level of Net Positive implementation in the current Stora Enso Consumer Board sustainability strategy. Additionally, since now being part of the Net Positive Initiative, the development of a divisional sustainability strategy for Consumer Board will be discussed and assessed. This hopefully will, at the same time, suggest how the BST 3.0 metrics can be leveraged and what the dimensions for the cartonboard industry are. Additionally, the implementation possibilities of Net Positive into the current Stora Enso's Sustainability Strategy will be discussed and metrics for responsible operations, products and supply chain will be proposed. Furthermore, the motivators and factors supporting the participation in the Net Positive Initiative will be thoroughly discussed.

### **1.4.3 Research methods**

In a qualitative research, the theoretical literature-based concepts and ideas are connected into the studied field (Golden-Biddle & Locke 2007, 4). In this study, the academic insights are bound to the corporate environment's processes with the intent to generate theoretically relevant findings. Thus, the thesis will not only try to present facts and figures for the readers, but instead it creates arguments that are intended to convince that the study offers something new against the existing knowledge of the Division.

The thesis will discuss the concept of sustainable business from the true business sustainability point of view. Dyllick and Muff (2013) have discussed the different levels of business sustainability and this discussion will act as a base for the study. Similarly, the Forum for the Future has developed the initiative of Net Positive where the impacts of a business shall be more positive than negative. The correlation of these two concepts will be discussed and compared to the Consumer Board Division's sustainability management systems and targets.

The study will evaluate, through current state analysis, how the Consumer Board Division's current sustainability framework and related targets meet with the ambitions of Net Positive and thus also to the true business sustainability. To support this assessment, focused interviews and surveys derived from the frameworks of both Business Sustainability and Net

Positive shall be carried out to bring more perspective to the current state and challenges addressed. By leveraging literature reviews, articles published by the company, current sustainability metrics and interviews, Net Positive can be better understood as well as the actual roadmap for net positive impacts which can eventually lead to business sustainability 3.0.

The thesis will carry out a gap analysis inside the Consumer Board Division to build a roadmap how the Division can reach the requirements of the higher BST levels. To determine the current situation, public information of Stora Enso, interviews and surveys as well as internal research and studies by the Consumer Board Sustainability unit are used. With this analysis, the strengths and opportunities of the current Consumer Board sustainability agenda can be determined. The study also tries to identify the areas that need to be advanced in light of the Net Positive Initiative.

In order to bring some concrete examples of the Stora Enso's sustainability work which could be linked to Net Positive, case studies of Stora Enso Consumer Board shall be introduced. For instance, socio-economic impacts through community engagement in China will be discussed. Other cases link to the principles of circular-economy and substituting effect of Consumer Board products.

#### **1.4.4 Structure and Scope of the Study**

The thesis can be divided into two main sections: the theoretical and empirical. The theoretical section discusses and examines the business sustainability in a modern business environment and the Stora Enso Consumer Board Division's Sustainability framework. The section will discuss the concept of corporate sustainability and true business sustainability. In addition, the theoretical section will follow to introduce the Net Positive Project and its principles under development. After the introduction of academic insights and concepts, an attempt to connect the different concepts will be made.

As one purpose of the thesis is to identify how the Net Positive framework shall be integrated to the existing Stora Enso Sustainability Agenda, the theoretical part identifies the

similarities and differences of the existing sustainability management of SE Consumer Board Division to criteria of true business sustainability and the Net Positive principles. In addition, the value proposition through sustainability will be discussed at a general level in the theoretical section.

The empirical part of the thesis will be analyzing the business sustainability and the Division's sustainability strategy in practice. This will identify how well the Group sustainability strategy, management, ambitions and goals are met today and which actions need improvement in line with the Stora Enso's Purpose. Also, the empirical section will offer suggestions for implementing the Net Positive mindset into the Division's operations. Here, different cases with possible positive impacts are discussed. The empirical part is summed up by the evaluation of the value propositions and the benefits gained from participation in the Net Positive Initiative.

## **2 LITERATURE REVIEW ON CORPORATE SUSTAINABILITY**

Throughout the history there has been debates whether or not the businesses have broader responsibilities to the environment than simply making profit for stakeholders (Benn & Bolton 2011, 56). One of the first introduction of social dimensions to be accounted amongst the economic progress was made by Howard Bowen in the mid-twentieth century (1953) in his book "Social Responsibilities of the Businessman". Ever since, wider ambitions on freedom, justice, personal integrity, development of individuals, stakeholder and community engagement have been set to indicate the social performance of a business. (Wells 2013, 2.) For instance, researchers like Carroll and Freeman have both been strongly influencing the development of the business responsibility scene in the past (Benn & Bolton 2011, 56; Carroll 1979, 500; Freeman 2009, 58; Wells 2013, 6).

Nowadays, the concept of corporate social responsibility (later CSR) has evolved to a landscape of definitional variations where an outline definition is hard to find. Many concepts are overlapping to an extent that the definitional boundaries are blurred. In the recent years, studies made by Montiel (2008, 260) as well as Dyllick and Hockerts (2002)

have been arguing the concept of sustainability being unclear and discussing the issue around the categories of CSR. Recently, Dyllick together with Muff (2015) have introduced a business sustainability (BST) typology and ponder the meaning of a corporation being truly sustainable.

## **2.1 Clarifying Corporate Sustainability from Corporate Social Responsibility**

Ivan Montiel conducted a wide review (2008) on articles published over the past three decades to clarify the definitions of CSR and corporate sustainability (later CS). In the study, Montiel (2008) points out that even if the top management has ambitions to act sustainably the confusion and ongoing creation of definitions might prevent correct actions to be made. Regardless of this, there is a common acknowledgement that the social and the environmental concerns are core issues to be addressed in today's business. (Montiel 2008, 246.)

The CSR has not accumulated into a paradigm, but rather into a conceptual frameworks where some proposals are more formalized and some better documented than others (Wells 2013, 1). A somewhat reasonable definition of corporate social responsibility is summed up by Werther and Chandler in the book "Strategic Corporate Social Responsibility" (2011). Here CSR is "[a] view of the corporation and its role in society that assumes a responsibility among firms to pursue goals in addition to profit maximization and a responsibility among a firm's stakeholders to hold the firm accountable for its actions" (Werther & Chandler 2011, 5).

The CS, on the other hand, can be considered to be a business approach which creates long-term value by applying the tripartite basis of environmental, economic and social dimensions into the core business of the organization. Furthermore, CS is the "efficient use of resources and generation of wealth so as to contribute to a healthy economy, society and natural environment". (Benn & Bolton 2011, 63.) Thus, the definition of CSR is much more general in sense and the CS could be seen as a sub-category of it.

To clarify the concepts further, the Montiel's study (2008) reveals that the CS considers the economic, environmental and social aspects as an integrated entity whereas the CSR considers, in many cases, the economic and social dimensions separately. Furthermore, it can be concluded that the CS has more eco-centric approach and resource based perspectives combined with motivation and institutional theories. On the contrary, the CSR has an anthropocentric or human-centered approach with stakeholder theory as the core of the business. (Montiel 2008, 252-254, 256, 258-259).

Another attempt to clarify the terminologies has been carried out by Dyllick and Hockerts in 2002 published article "Beyond the Business Case for Corporate Sustainability". In the article (2002, 131), the writers acknowledge that the eco-efficiency is an important area in the strategies of the organizations, however it is solely insufficient to cover the corporate's sustainability concept. Instead, Dyllick and Hockerts define the corporate sustainability as "meeting the needs of a firm's direct and indirect stakeholders ... without compromising its ability to meet the needs of future stakeholders as well". (Dyllick & Hockerts 2002, 131.) In line with the United Nations' report "Our Common Future" (WCED 1987), the definition thus binds the economic prosperity and social equity, the common quests of sustainability, with "the concern for the carrying capacity of natural systems" (Dyllick & Hockerts 2002, 130).

## **2.2 True Business Sustainability**

Based on the Dyllick and Hockerts study (2002), the tripartite dimensions of the sustainability should also be considered as three different types of capital that the organization needs to address in its operations. These are economic capital, natural capital and social capital (see table 1 for more detailed explanation of the capitals). As these dimensions are strongly interrelated in modern business world, only focusing on the profit maximization would bring nothing but short-term success. With the true business sustainability mindset, the long-term prosperity is achieved only when the discussed dimensions are considered simultaneously. (Dyllick & Hockerts 2002, 132-133.)

Furthermore, the Dyllick and Hockerts (2002) introduce new criteria, in addition to the traditional eco-efficiency, for the development of business sustainability. These are socio-efficiency, eco-effectiveness, sufficiency, socio-effectiveness, eco-effectiveness and ecological equity. These criteria, together with the three capitals described, need to be covered before a corporation can be considered to have truly sustainable contributions. (Dyllick & Hockerts 2002, 135.) The discussed sustainability capitals and the interrelated criteria have been expressed in more detail in table 1 below.

**Table 1.** The tripartite capitals and the corresponding criteria of true business sustainability (Dyllick & Hockerts 2002).

<b>Economic Capital</b>		<b>Environmental Capital</b>		<b>Social Capital</b>	
traditional fixed and operational capitals		ecosystem services capital		societal capital	
financial, tangible, intangible capital		natural resources capital		human capital	
i.e. equity and debt, stocks and machinery, reputation and know-how		i.e. water purification, plant reproduction, biodiversity, fossil fuel, wood, soil quality		i.e. employees, business partners, supportive culture, educational system, democracy	
<b>Eco-Efficiency</b>	<b>Socio-Efficiency</b>	<b>Eco-Effectiveness</b>	<b>Sufficiency</b>	<b>Socio-Effectiveness</b>	<b>Ecological Equity</b>
Competitively priced goods and services are used to satisfy human needs whilst resource intensity and ecological impacts are constantly reduced (DeSimone & Popoff 1997, 47)	Boosting the positive social (i.e. employment generation or community engagement) impacts and minimizing the negative ones.	Effectiveness of the organization's processes of natural conservation which are designed to have renewable and healthy impacts.	Considers the consumer choices rather than the organization's responsibility. The point where the consumers' needs are filled by a service.	Effectiveness of the organization's processes which aim to enhance the social welfare.	Concern in today's consumption so that shortage of natural capital will not have to be tolerated by future generations alone.

Balancing the criteria in the quest of efficient corporate sustainability can be challenging, as not all expectations can ever be met simultaneously (Galdwin et al. 1995, 42). The emphasis on the different capital as well as the discussed criteria varies depending on time and context (Dyllick & Hockerts 2002, 138). Further, the sustainability can be regarded as weak or strong depending on how the capitals are being balanced. If the environmental, economic and social capitals are kept as independent dimensions yet each of them are addressed simultaneously in a proper level, one's efforts can be considered to be in line with strong sustainability. (Figge & Hahn 2004, 174.) Deriving from the strong sustainability, Dyllick and Muff (2015) have been developing a new approach, a typology, to better understand and scale the sustainability contributions by an organization.

### **2.3 Levels of Business Sustainability**

Dyllick and Muff (2015, 2) identify a big disconnect between the organization's micro-level sustainability progresses and the on-going macro-level deterioration of global challenges. Even though, the organizations have addressed the different criteria and the capitals, it has not resulted in significant improvements on the global sustainability level. (Dyllick & Muff 2015, 2.) Thus, the researchers have introduced a divergent approach to the businesses to execute sustainability.

The reference point of the business sustainability (later BST) typology is the business-as-usual (BAU) situation where organizations strive for economic value only through profit and shareholder value (Dyllick & Muff 2015, 8). Such aspiration can be reached, for instance, through efficient processes and finding cheapest possible resources. This does not benefit the society or environment, only the shareholders. In this BAU level, the perspective in business operations is fully inside-out as the profit maximization is the basis for decision making and planning the actions (Dyllick & Muff 2015, 8).

The first, yet insufficient, effort towards sustainable business is the BST 1.0 level. Here, the company acknowledges that there exists environmental and social challenges outside of the market. These challenges are normally claimed by external shareholders creating economic

risk if not addressed properly. Thus, due to the potential business opportunities organizations integrate the concerns into the existing infrastructure and processes without altering the core business idea. (Dyllick & Muff 2015, 8.) In many cases, these efforts are made to enhance the attractiveness as well as reputation of the business. Thus, the motives still lie in profit maximization and the prosperity is evaluated heavily from the economic point of view. (Dyllick & Muff 2015, 9.)

The BST 2.0 represents the level into which many sustainably ambitious enterprises can be categorized. Defined by Dyllick and Muff (2015, 9), a BST 2.0 company practices the triple bottom line approach and thus broadens its stakeholder perspective. The value creation exceeds the shareholder value by including environmental and social values. Here, the value is created by setting measurable and reportable goals, targets and programs to address certain sustainability issues or stakeholder groups. (Dyllick & Muff 2015, 9.) The perspective can still be seen inside-out even though the company produces, invents and even reports results of well-defined sustainability areas whilst generating economical profit.

The final level, the truly sustainable business, is a company that “shifts its perspective from seeking to minimize its negative impacts to understanding how it can create a significant positive impact in critical and relevant areas of society and the planet” (Dyllick & Muff 2015, 10-11). A BST 3.0 company aims to deliver positive impact by its expertise, resources, products and services. By the shifted outside-in perspective to operate, a truly sustainable business is able to turn the environmental and societal sustainability issues into business opportunities (Dyllick & Muff 2015, 11). Consequently, in a case where the organization is able to make business sense of the global challenges, the organization can be observed to gain profit without compromising the wellbeing of the environment and the society.

## **2.4 The Roadmap to Business Sustainability 3.0**

In another study, Muff together with Dyllick (2014, 2) note that the concept of integrating environmental and social concerns with economic challenges in order to reach business sustainability is still not well understood. This in mind, the researchers have developed a

roadmap with defined criteria to guide organizations towards better business sustainability. The roadmap introduces a schematic approach to compare the levels of business sustainability to the business-as-usual (BAU) and to illustrate the order of the shifts from level to another (Muff & Dyllick 2014, 4; Dyllick & Muff 2015, 13). The schematic presentation of BST typology by Dyllick and Muff is presented in the table 2 below.

**Table 2.** The shifts and key characteristics of the BST typology (Dyllick & Muff 2015, 13).

BUSINESS SUSTAINABILITY TYPOLOGY (BST)	Concerns (What?)	Values created (What for?)	Organizational perspective (How?)
Business-as-usual	Economic concerns ↓	Shareholder value	Inside-out
Business Sustainability 1.0	Three-dimensional concerns ↓	Refined shareholder value	Inside-out
Business Sustainability 2.0	Three-dimensional concerns ↓	Triple bottom line	Inside-out
Business Sustainability 3.0	Starting with sustainability challenges	Creating value for the common good	↓ Outside-in
The key shifts involved:	1 <sup>st</sup> shift: broadening the business concern	2 <sup>nd</sup> shift: expanding the value created	3 <sup>rd</sup> shift: changing the perspective

Each level of BST and the relating shifts possess challenges typically relating to ownership, governance, strategy and culture (Muff & Dyllick 2014, 5). The grey arrows on the table above represent the three most important steps to become a truly sustainable business. As per Dyllick and Muff (2015, 13), these shifts will each have different consequences in the business. For instance, the economic paradigm of profit-orientation will shift to realization that there exists other challenges than shareholder value maximization, expansion of the values created widens the organization's purpose and thus also the outputs to include the nonbusiness targets and, finally, the shift from inside-out to outside-in perspective enables the consideration of societal and planetary challenges and truly relevant contributions associated to them. (Muff & Dyllick 2014, 4; Dyllick & Muff 2015, 13.)

In addition, the researchers have conducted a comparative "Business Sustainability Typology Grid" (Muff & Dyllick 2014) to distinguish the differences between the levels of

the BST concept. The grid offers 13 distinguishing criteria which summarize the perspectives an organization should take in a certain level of BST. This Business Sustainability Typology Grid is presented in the Appendix 1. The grid aims to enable the executive teams in organizations to evaluate their current state and better understand the implications needed to get to the desired level of BST (Muff & Dyllick 2014, 12-13). A recap of the typology grid and the requirements of each level is summed up in table 3 below.

**Table 3.** The recap of the levels of BST (Muff & Dyllick 13).

<b>The Business Sustainability Typology Grid</b>			
<b>Business-as-usual</b>	<b>BST 1.0</b>	<b>BST 2.0</b>	<b>BST 3.0</b>
Following strictly legally required minimal activities and managing risks	<p>Creating shareholder value</p> <p>Embracing opportunities and managing risks</p> <p>Based on new environmental, social and economic developments</p>	<p>Broadening the stakeholder perspective</p> <p>Re-defining their business models and products/services to reflect triple bottom line approach</p> <p>Process by which firms manage their financial, social and environmental risks, obligations and opportunities</p> <p>These goals and values are addressed through particular programs, measured and reported about</p>	<p>Re-defining internal capabilities, competencies and resources in service of societal issues</p> <p>New strategies, business models, products/services as a voluntary &amp; proactive responses to societal, environmental or economic issues/challenges</p> <p>Typically an active collaboration with non-market actors across all sectors</p> <p>Changing the rules of the game in order to generate a significant positive impact in critical and relevant areas for society and the planet</p>

The study acknowledge (Muff & Dyllick 2014, 15) that the criteria offered in the grid are initial and most likely impossible to achieve in some business models. However, the typology and the grid together serve as a starting point for debate, evaluation and further developing of the concept of BST. Additionally, the researchers note that to measure the improvements and success made by truly sustainable business, the different industries have

to materialize the sustainability issues to their operations (Muff & Dyllick 2014, 15). In other words, there is a great demand to develop industry specific metrics for efficient monitoring of sustainability contributions.

### **3 THE NET POSITIVE INITIATIVE**

The foundation of the Net Positive Project is the ideology to create a positive and especially supporting platform for industries to thrive more sustainable solutions in the business environment. Simply put, the aim is to have more positive impacts than negative ones (Measuring Net Positive 2014, 4; Tynkkynen & Berninger 2017, 1). In the initiative, different organizations from different industries are expected to engage openly about their sustainability work and share success stories of new, better practices which then can lower the barriers of other organizations to integrate and adapt more sustainable business processes to their operations.

The Net Positive framework aims to create a manuscript to guide businesses to have more positive contributions to the world. This new way of doing business is steered by 12 Net Positive principles. The principles have been listed in the Appendix 2. The principles are, high-level to allow them to fit into multiple business sectors, geographies and challenges. Being very generic, the Net Positive still offers a clear starting point for ambitious businesses to have positive corporate footprint with principles guiding as a checklist. (Net Positive Report 2014, 6)

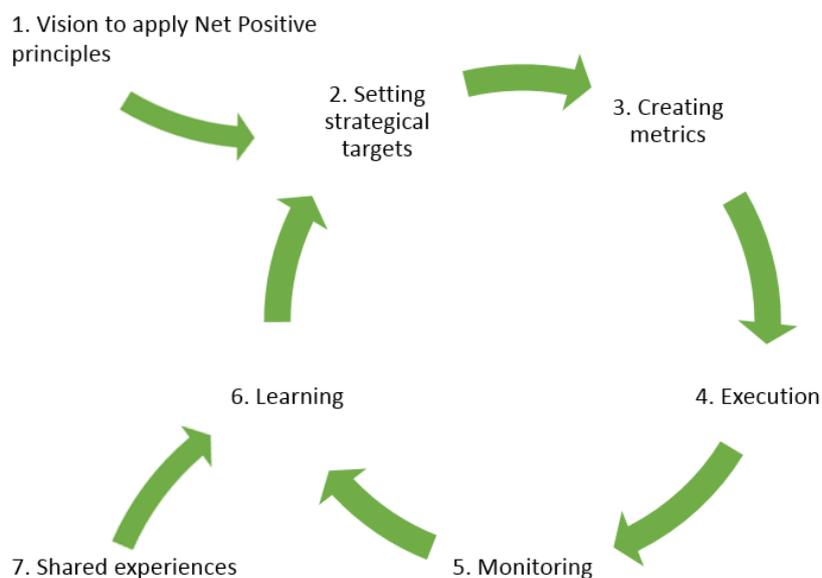
These principles provide a rather simple framework for organizations to develop a Net Positive strategy. This enables the Net Positive framework to be implemented in different businesses and industries still maintaining the robust positive contribution approach (Net Positive Report 2014, 7). Additionally, the NPG acknowledges (Measuring Net Positive 2014, 5; Net Positive Report 2014, 7) that the every single thing can be challenging to measure and the movement begins even from smaller ambitions for product lines or regions which can later develop to be applied to businesses as whole.

The movement emphasizes (Net Positive Report 2014, 7) that the business-as-usual is insufficient for those companies thriving to be of Net Positive. The commitments need to go beyond the familiar best-in-class sustainability approaches of the organizations and reflect transpiring leadership and commitment towards the concerns of both natural and social capital (Net Positive Report 2014, 7, 10). Thus, to ensure the most impactful approach of Net Positive, the starting point of the implementation should be to address the most material aspects of the organizations' supply chain, their designs, production processes as well as the usage and disposal phases (Net Positive Report 2014, 7).

### **3.1 The Net Positive Development Process**

Like CSR, the Net Positive framework does not offer a single correct approach to implementation. The Net Positive framework consists of a significant amount of “learning by doing” and the organizations' different approaches will confront a range of challenges. (Net Positive Report 2014, 7.) As per the Net Positive Group highlights (2014, 7), even though the companies' Net Positive strategies vary from one another, the mindset and motivation for the common good are consistent. The members apprehend the importance of corporate governance and the need in responding to stakeholder concerns whilst sharing the concern about resource scarcity and the related price volatility. (Net Positive Report 2014, 7.)

Therefore, Tynkkynen and Berninger propose in their publication (2017) that the development of the Net Positive should be considered through a net positive development process illustrated in figure 2 below. The development of the net positive contributions is considered circular in nature where the processes are being developed by the feedback of monitoring, lessons learned and shared experiences. (Tynkkynen & Berninger 2017.)



**Figure 2.** The net positive development process (Tynkkynen & Berninger 2017).

Achieving net positive targets requires persistent work (Tynkkynen & Berninger 2017). However, having the correct mindset with the positive contribution approach, will offer both long- and short-term business benefits (Net Positive Report 2014, 10). Some impact areas like renewal rates, climate change mitigation or demographic change processes have much longer time horizon than return of investment or financial returns. Thus, only a short-term profit orientation will not carry.

As per the NPG (Net Positive Report 2014, 10), the long-term benefits associated with the Net Positive are success and resilience. In long-term, the movement will shape the business context towards more sustainable simultaneously creating new business opportunities and business sectors. In turn, short-term benefits link to the standard business benefits like cost reduction, increased sales, supply security, differentiation and competitive advantage. (Net Positive Report 2014, 10.)

The Net Positive is greatly relying on existing standards, regulations and guidelines (Measuring Net Positive 2014, 5). The Initiative develops as new organizations and companies are joining the NPG. Already registered organizations continue to share their commitments and best practices into the Initiative (Measuring Net Positive 2014, 5). This will develop the movement constantly as new better disclosures and measurements are

introduced. They help the movement to establish standardized measurement areas, scope of the Net Positive and over all create consistency (Measuring Net Positive 2014, 9). By this, the movement of Net Positive is visioned to soon become a normal way of doing business.

### **3.2 The Measurement Principles**

To clarify the ambiguous paradigm of measuring sustainability, the NPG has created seven measurement principles to help develop monitoring of Net Positive and especially to make the measuring consistent and uniform (Measuring Net Positive 2014, 5). These measurement principles are:

- Transparency
- Consistency
- Completeness
- Separation of different impacts
- Separation of positive and negative impacts
- Utilization of exiting measurement when possible
- Data sharing

Measuring the organization's processes and Net Positivity can be executed in multiple ways. The calculations, their assumptions, data sources as well as approximations need to be transparently and consistently reported (Measuring Net Positive 2014, 9). This kind of sharing of information benefits the Net Positive movement by stimulating debate, identifying key measurement areas and aiding other members adapt best available measurement methods. (Measuring Net Positive 2014, 5, 9.)

At the moment, there is a lack of comprehensive understanding of how to compare and trade off different kinds of impacts. The general guideline is, however, to keep different impacts separated. As an example, the positive efforts of employee training shall not compensate possible bad working conditions. (Measuring Net Positive 2014, 9.) The principles

acknowledge, that guidance is available through standards and guidelines such as the ISO series or the GRI reporting (Measuring Net Positive 2014, 11).

Therefore, existing and well proven methods for analysis should be applied when possible (Measuring Net Positive 2014, 9). This adds up to the fact that the movement is still trying to find its place in the complex and diverse field of corporate sustainability. Eventually, the vision of the Net Positive movement is to establish generally accepted, standardized practices. Until then, the importance of utilizing the existing methodologies and transparent data sharing is vital for accelerating the movement (Measuring Net Positive 2014, 9).

### **3.3 The Impact Areas**

The NPG has listed several impact areas which have been most frequently referred to by the members of the Net Positive Initiative (Measuring Net Positive 2014, 10). These impact areas include carbon, water, social, material use and ecology (Measuring Net Positive 2014, 5). The NPG (Measuring Net Positive 2014, 10) recommends the organizations to consider the impact areas across its own boundaries and operations where all of the key impact areas are considered, not just the ones presented in the NPG guidelines.

Three particular aspects have risen from the debates related to key impact areas. One of the critical issue is the way the data is measured, used and shared. The assessment of the sensitivity of the data and how this contributes to business processes still requires clarification in terms of transparency. (Measuring Net Positive 2014, 33.) Other challenges of measuring the Net Positivity relate to the impact area specific concerns. Measuring for instance the impacts of carbon, material use and ecology raises the concern of offsetting, counterbalancing the negative impacts with positive ones (Measuring Net Positive 2014, 34, 35; Gray 2015, 153-154). Another related issue is the consequences of using economic value to measure ecological or social value as there exists as many measures for both natural capital and social value as there are elements to them. (Measuring Net Positive 2014, 34).

Finally, the third major concern of measuring the key impact areas in Net Positivity is the scale of covered impact areas. The NPG contemplate (Measuring Net Positive 2014, 33), whether it is wise and effective for an organization to focus on Net Positivity across a range of impacts. Committing fully to the key impact areas can result in much more ambitious and in-depth solutions than efforts to cover as many areas as possible. Tynkkynen and Berninger (2017) also support the fact that organization should not try to address all areas at once. Instead, the organizations need to focus first on areas most significant to the organization's business. (Tynkkynen and Berninger 2017.)

### **3.4 The Measurement Activities**

Since monitoring impacts is subjective and results vary based on the approach one has chosen, the NPG has created management steps to bring consistency and objectivity to measure and report the Net Positivity. The management steps are:

- Assessing the materiality
- Measuring impact
- Extrapolation
- Measuring outcomes
- Assurance
- Transparency

In addition to creating a uniform measuring basis, the Net Positive management steps introduce the minimum disclosure requirements of each step. (Measuring Net Positive 2014, 10.) Keeping these management steps in mind when evaluating the key impact areas of an organization will retain the scope relevant to the Net Positive movement.

Standards and guidelines recommended to be used in a Net Positive project include, for instance, the International Organization of Standardization (ISO) 14000 standard series, Publicly Available Specification (PAS) 2050, Global Reporting Initiative (GRI) and Greenhouse Gas Protocol (Measuring Net Positive 2014, 11). These guidelines and standards

provide support in assessing materiality, impacts, outcomes as well as guidance in disclosing methods, assumptions and calculations.

The essence of Net Positive is to be as transparent as possible in data sharing and communicating the calculations and data sources (Measuring Net Positive 2014, 9, 19). This does not only build trust amongst stakeholders but also educates others (Measuring Net Positive 2014, 9, 19; Dyllick & Muff 2015, 14 -15). The statements and outcomes need to be substantiated by external audits (Measuring Net Positive 2014, 18). The assurance process is essential in gaining confidence, proving the actions of organization and ensuring acceptance amongst the stakeholders. Thus, an organization should acquire external and internal assurances as well as attend to certification schemes to justify the actions taken.

#### **4 RESEARCH FRAMEWORK TO ASSESS DIVISION'S SUSTAINABILITY**

The main focus of the assessment is based on the true business sustainability framework, its different levels and key shifts in business operations. The Net Positive Initiative has been in development for over a year and the concept shows similarities in vision, ideology and criteria with the literature-based BST framework.

The NPG has recently conducted a Net Positive Project Maturity Matrix to scale the contributions of the participating companies (see Appendix 3). The Business Sustainability Typology Grid and the Net Positive Maturity Matrix contain criteria addressing the same sustainability characteristics. These areas of sustainability are:

- Materiality
- Stakeholder engagement
- Strategy implementation

- Collaboration
- Scope
- Innovation
- Transparency.

Therefore, the research framework base on the grid derived from the Net Positive Maturity Matrix model to which the BST framework has been reflected. The created True Business Sustainability Grid is presented in table 4 below.

**Table 4.** The convergence of True Business Sustainability and Net Positive.

Criteria	Business Sustainability 1.0	Business Sustainability 2.0		Business Sustainability 3.0
	Net Positive Level 1	Net Positive Level 2	Net Positive Level 3	Net Positive Level 4
Materiality	Addresses <b>most</b> material area. Any negative impacts created by <b>this approach</b> are also addressed.	Addresses the <b>two</b> most material areas Any negative impacts resulting from <b>either issue</b> on another material area are also addressed.	Addresses <b>three</b> most material areas.	Addresses <b>all</b> material areas. Net Positive strategies focus on <b>all material areas</b> . A <b>positive impact in one material issue cannot compensate for the negative impact or 'footprint' in another material area</b> .
Stakeholder engagement	Identifies material areas via <b>indirect</b> stakeholder perspectives (e.g. through desk research)	Identifies material areas through a stakeholder <b>'expert' advisory panel</b> .  Feedback integrated into Net Positive strategy and implementation	Identifies material areas through <b>direct engagement</b> with stakeholders that both impact the organization, and are impacted by the organization.	Identifies material areas through <b>direct engagement</b> as in Level 3, however, aspects of the strategy and operational plan are <b>co-created</b> in partnership with key stakeholders.
Sustainability implementation	Focuses on the strategy of <b>one</b> key business unit or part of the organization. Ownership of strategy is that <b>one team</b> or the Sustainability Team.	Focuses on the strategy of <b>two or more</b> key business units or parts of the organization. Ownership of strategy includes with those <b>key business/organizational teams</b> .	Addresses net positive <b>organization-wide</b> and integrates net positive into core organizational/executive governance.  CEO owns the strategy.	<b>Transforms existing business model</b> to outside-in perspective  <b>Every head of department is accountable for a piece of the strategy</b> . It is reviewed alongside commercial targets at the Board level.
Collaboration	<b>Seeks information</b> from value chain partners directly relevant for net positive ambitions.	<b>Collaborates</b> with value chain partners to jointly pursue net positive-relevant outcomes.	Collaborates with partners to define and advance value chain-wide approaches to net positive.	<b>Broadly collaborates</b> to effect net positive system-wide change through large scale collaboration aimed at defining and pursuing net positive outcomes
Scope	Addresses <b>direct</b> impacts	Addresses <b>cradle to gate</b> impacts	Addresses <b>cradle to grave</b> impacts	Addresses <b>all the systems</b> raised in the materiality assessment that the organization influences (e.g. lobbying, public affairs, etc.)
Innovation	<b>Raises awareness</b> of net positive concept as aspiration for sustainable innovation	<b>Integrates</b> net positive ambition and analysis into R&D and go-to-market	<b>Pilots and launches</b> innovative offerings based on net positive ambition and analysis	Makes <b>fundamental changes</b> to core offering(s) and innovates new approaches to achieve net positive impacts
Transparency	<b>Communicates generally</b> on its aspirations and efforts for net positive	<b>Publicly commits to achieve</b> NP ambition in alignment with principles	<b>Reports publicly</b> on its commitment, as well as methodology, metrics, goals, and progress towards that commitment, along with lessons learned	<b>Establishes a time-bound commitment and reports publicly</b> on methodology, metrics, goals, and progress towards that commitment, along with lessons learned. Organization secures <b>verification</b> by an external stakeholder/assurer.

The grid consists of three upmost columns representing the BST framework. The grid is then divided into four columns as per the criteria levels of the Net Positive Initiative. Different shades help the reader to better understand how the Net Positive levels correlate to the theoretical concept.

The levels of BST and Net Positive are rather challenging to connect based on the definitions of criteria. The Net Positive level 1 shows many similarities to the BAU and BST 1.0 stages

of the business sustainability context. On the other hand, the BST 2.0 covers many criteria of the different levels of Net Positive (even reaching from level 1 to level 3). This showcases the complexity of the current state of measuring business sustainability and evaluating the scale of efforts.

Considering the Net Positive Project as a continuum for the BST framework, the thesis will attempt to connect the Stora Enso Consumer Board Division operations into the grid above. This can be then utilized to analyze the level of sustainability contributions of the Division from the true business sustainability perspective.

## **5 METHODOLOGY AND ANALYSIS**

Traditional research methodology contains data collection, data analysis and data interpretation (Saunders et al. 2009, 5). Based on the research design various methods and instruments can be applied. For a qualitative research, most common research methods are interviews and questionnaires of focus groups, case studies and document analyzes (Saunders et al. 2009, 485).

The primary data collection of the study can be executed by internal questionnaires and observations from textual content. In addition, conducting focused interviews can provide detailed and more comprehensive data as the interviews possess flexibility over surveys. By the combination of mentioned methods, a rather profound analysis can be incorporated to the research framework. (Saunders et al. 2009, 145, 320.) Therefore, these research methodologies represent the most appropriate approaches to bring answers to the research questions set for the thesis.

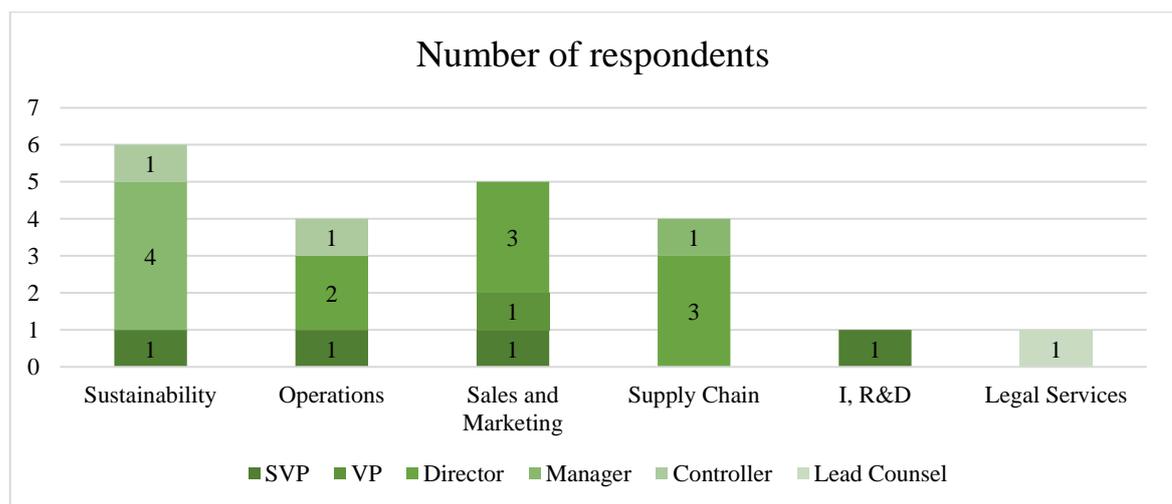
### **5.1 Data Collection through Literature Review and Questionnaire**

The data collection for the thesis was conducted by a study of existing academic publications and research reports, both externally and internally published material, internal questionnaire survey and interviews with the Division's Sustainability Team and relevant actors. The

review of literature and the survey done in the Division were used as tools to examine the current sustainability commitments. To support the material, focused interviews with the workforce were held to fill in the literature gaps and to provide deeper insight into the area of study.

The internal survey was targeting staff in with management positions. With the survey, the current implementation status and the level of awareness of the Stora Enso sustainability agenda was be evaluated as the questionnaire aimed to answer questions; where do we observe to stand today? How do we respond to our mission statements?

In the initiation phase of the questionnaire, the CB Sustainability Team was consulted to identify the most relevant internal stakeholders in the context of Consumer Board Division's sustainability. A total of 44 personnel were invited to participate in the study which was conducted as an online survey between March and April 2018. The respondents were engaged into the questionnaire via email invites and reminders. A total of 21 respondents were included into the survey. The department and acting roles of the respondents have been categorized in the figure 3 below.



**Figure 3.** Respondents participated in the internal questionnaire.

The internal questionnaire consisted of 14 multiple choice questions and 4 open questions linked to the combined True Business Sustainability Grid. The multiple choice questions were derived from the shared sustainability characteristics of the discussed frameworks. All

in all, eight criteria were chosen From the Business Sustainability Typology Grid and six from the Net Positive Maturity Matrix. Similarly, the open questions were derived from the study by Muff and Dyllick (2014, 16) with the aim to clarify the challenges associated to the shifts for better BST level. The internal questionnaire conducted in the Division is presented in Appendix 4.

## 5.2 Data Analysis and Evaluation

The questions for the internal survey followed the nature of structured data collection where the questions and answers have been pre-coded (Saunders et al. 2009, 392). This way, the questionnaire enabled to identify general patterns in a descriptive way. In turn, the given multiple-choice answers did not allow much flexibility for the answers, but instead gave straight forward results for further utilization.

The findings gathered from the literature-based sources, like annual reports and internal presentations, are rich and full of data. Similarly, the open questions in the questionnaire need a careful preparation before a proper analysis. Thus, the data analysis and evaluation need to be processed through the steps presented in table 5 below.

**Table 5.** The process of data analysis (Saunders et al. 2009, 618-619).

<b>Step</b>	<b>Process</b>
1	Data Collection <ul style="list-style-type: none"> <li>- Primary data (company literature, questionnaire)</li> <li>- Secondary data (interviews, previous researches)</li> </ul>
2	Preparation of data
3	Qualitative analysis and interpretation of data
4	Developing conclusions

After the open responses and interviews have been cleaned, categorized and transcribed, the data can be analyzed and evaluated manually. By the evaluation, an overview of the opinions and approaches can be formed. In turn, the responses received from the questionnaire do not

require that much preparation and can be analyzed as they are. From the data collected, the general picture of the Division's sustainability can be built and linked to the developed grid. Moreover, the analysis contributes to the propositions and conclusions presented later on.

### **5.3 Validity and Reliability**

Conducting a qualitative research raises the concern of reliability and validity of both the material used for the study as well as the outcomes of the thesis. Researchers Beverland and Lindgreen (2010) have round up the definitions for reliability and validity so that a research can be considered reliable when concepts are well defined and build from academic literature. Additionally, transparency and data sharing contribute to the reliability of a research. Validity, on the other hand, can be seen as the degree of correct findings and relevant measures for the studied concepts (Beverland & Lindgreen 2010, 57.)

In terms of the academic material used for the thesis, the study utilizes literature ranging from the early development stages of CSR up to publications of year 2017. Thus, the various academic sources used in the thesis contribute to the reliability of the study. However, it has to be noted that due to the ambiguousness of the studied concepts, the validity of these studies are often justified in a slow pace. Yet, the concept of determining true business sustainability has gained popularity amongst the researchers of sustainability which indicate the validity of the theoretical concepts discussed.

From the questionnaire point of view, the reliability and validity is more dilemmatic. Due to the structured data collection, the respondents had a feeling that some of the given choices for answer did not truly match with the perceived state of the Division. Additionally, the limited amount of respondents affected the reliability of the research result. However, the questionnaire was kept same for each respondent and the evaluation of the results was transcribed carefully. A detailed description of the questionnaire and the open word questions has been provided to ensure the traceability and rearrangement of the review.

In addition, the quality of the obtained responses was dependent on the competencies of the respondents. This can affect the validity and reliability of the data collected as there can be notable differences in the awareness level of sustainability commitments amongst the respondents. Nevertheless, the results provided plenty of insights to the current state of the Division's sustainability efforts and revealed essential areas of improvement.

Considering the above, the thesis provides a somewhat decent overview on the development of the current state SE CB Division's sustainability agenda in line with the Net Positive and BST concepts. It approaches the Net Positive requirements from a business perspective with the support of relevant theoretical concepts in mind. With a supportive sense, the study discusses the possibilities of an existing business to adapt to the new approaches. Additionally, the results of the study may be utilized to initiate further research on the subjects covered.

## **6 RESEARCH RESULTS**

The following chapter of the research results will first have a glance at the overarching Stora Enso Sustainability Strategy and the existing Consumer Board Sustainability framework, the relating legislation and regulations, standards and the sustainability meters. Then, the results of the divisional survey will be discussed to assess the current state of the Division's sustainability against the aspirational Net Positive framework.

These findings, will bring valuable information for the study to position the Division in the formulated True Business Sustainability Grid and perform the gap analysis. By the end of this section we want to have answers to the following questions: Where do we stand today in terms of Sustainability and Net Positivity? How well do we respond to our ambitions? Where are we good at and where to improve?

## 6.1 Current State of Consumer Board Sustainability

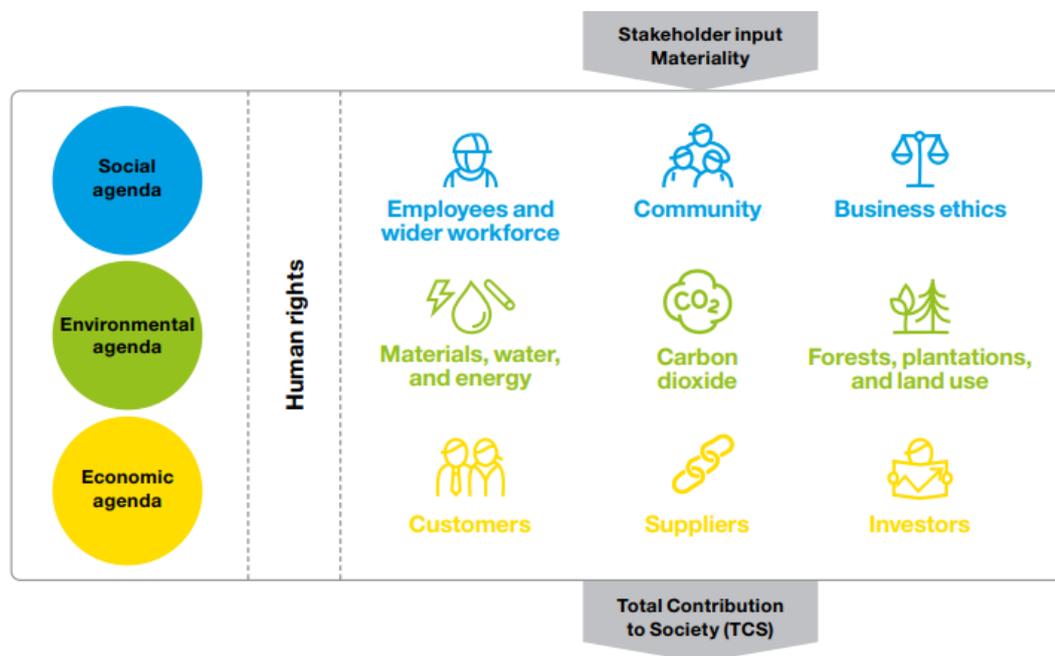
Eco-awareness has grown amongst the customers of Consumer Board and their consumers and the sustainability considerations nowadays include much more than just the raw materials used. It is associated to responsibility in all aspects of production efficiency, logistics and the supply chain. (Progress Book 2017, 14.) To maintain Division's strong market share requires responding to the customer and consumer preferences, supporting them throughout the value chain and by mitigating potential negative impacts on the environment and the society. That said, the Consumer Board Strategy has been summed up in the figure 4 below.



**Figure 4.** The Stora Enso Consumer Board Strategy 2017.

The strategy of the SE CB Division clearly presents the objectives of a traditional profit oriented business. The main objective of the Division is to be a high performing organization through profitable growth. The leadership positions in sustainability and innovation are emphasized in the strategical targets of the Division. However, these strategical excellences are valued in order to succeed in the profitable growth. Therefore, the organizational perspective is strongly economic concerned representing the inside-out thinking in the BAU level.

The Consumer Board Sustainability strategy stems from the Group wide Sustainability Agenda presented in the figure 5 below. The Stora Enso's Sustainability Agenda and Policy (see Appendix 5), hence also that of CB Sustainability, is based on the triple bottom line frame consisting of social, environmental and economic pillars. The human rights dimension weights so much for the organization that it acts as an overarching theme alongside the whole sustainability framework (Sustainability Report 2017, 4; Sustainability Strategy 2017).



**Figure 5.** The Stora Enso Sustainability Agenda (Sustainability Report 2017, 5).

This Group Sustainability Agenda discourses ten sustainability topics which have been identified as material to the company. These key material areas have been considered constituent to the organization's long-term ambitious targets and they are monitored both in Group- as well as Division-level. The company-wide Sustainability Agenda takes into consideration the tripartite dimensions of the sustainability which represents the first shifts made in the business sustainability roadmap. Thus, based on the Sustainability Agenda the Division indicates commitments that can be linked to the BST 1.0 and 2.0 levels.

In addition, all suppliers are expected to comply with Stora Enso's Supplier Code of Conduct to align the operations with the target programmes (Stora Enso Progress Book 2017, 16). Other examples of the sustainability investments to unite the commitments across the

organization include the employee education and development, trainee programmes and periodical audits and meetings. Such efforts deepen the employee engagement, commitment and responsibility of the workforce which further promote sustainable stewardship of the company.

### **6.1.1 Targets and Ambitions of the SE CB Sustainability Agenda**

The organization wants to proactively enlarge the Sustainability Agenda to stay relevant to the key stakeholders (Progress Book 2017, 14). By building on key customer sustainability drivers and the global sustainability agendas and by developing an efficient roadmap for sustainability leadership, Consumer Board aims to become an industry lead in sustainability. This said, background for some of the sustainability commitments could be seen to derive from past failures and concerns and pressure by the key stakeholders. To achieve a BST 3.0 business, the sustainability initiatives should stem from the most pressing global challenges instead of the most important business partners.

Close cooperation and demands from global brand owners and customers provides a good foundation for customer centric sustainability agenda in the Division. The aim is to collectively develop sustainable solutions for the society and the planet. For instance, packaging industry challenges such as making the products 100% renewable and recyclable products, minimizing the product carbon and water footprint, having the highest material efficiency or contributing to a circular economy are hot topics around the world. These addressed challenges that mainly aim to minimize the negative impacts by the Division should be considered as the BAU level. For higher business sustainability levels, new commitments and initiatives should be established with the purpose of creating positive outputs for the society and the planet.

Additionally, the Division work continuously with international and non-governmental organizations (NGOs) to respond to global megatrends and stakeholder expectations. An example is the Stora Enso's participation in the World Business Council for Sustainable Development (WBCSD) initiatives like the Redefining Value, the Forest Group, Factor 10 and Fresh – the latter two being linked to circular economy. Collaboration partners also

include WWF, ILO, BSR (Business for Social Responsibility) and the Cambridge Leaders Group (CLG). On the responsible sourcing side, Stora Enso is a member in Ecovadis (Gold status) and the Supplier Ethical Data Exchange (SEDEX). Thus, all of the Consumer Board mills are SEDEX audited. (Hietavuo 2018.)

On the regulatory side with focus on thriving circular economy in particular, the Division is a member of the Association of Beverage Cartons and Environment (ACE), Pack2Go and Europen. The Consumer Board also represents Stora Enso in the Finnish Forest Industry Association (FFIF) Environmental Committee, Finnish and Swedish Recycling Association and the Confederation of European Paper Industries (CEPI).

In late 2017, the Consumer Board Division decided to join the Net Positive Initiative and at the same time agreed that in addition to Group Sustainability Agenda, the Consumer Board would start developing its own strategy aligned with the Agenda. Being one of the early members in a pioneer initiative allows the organization to engage in influencing the development of the new framework for sustainable business and to adapt the mindset amidst the pioneer businesses. Additional examples of the collaborative projects of the organization are the agreements established with Aalto University, Chalmers University and KTH Royal Institute of Technology (Progress Book 2016, 21).

In addition to the establishment of the above mentioned sustainability collaboration networks and partnerships, in 2017 the company joined the Science-Based Targets initiative (SBTi) and submitted its targets to reduce the greenhouse gas (GHG) emissions in accordance with the United Nation's Intergovernmental Panel on Climate Change (IPCC). These targets will reduce the GHG emissions of the Stora Enso operations throughout the value chain by 31% per produced tonnes of pulp, paper and board by 2030 from the 2010 baseline. In practice, the carbon emission reductions will be achieved by investments and improvements in new technology and by increasing the energy efficiency of the current production processes and further use of bio-based fuels. (Stora Enso 2018.) Thus setting the science-based targets as the first forest products company, the organization showed concrete pioneering efforts in mitigating the climate change.

There are multiple targets and goals in the SE CB Division's Sustainability framework, mostly driven by the Group Sustainability Agenda. However, the most critical finding of the current way the SE CB Division operates is the absence of its own sustainability strategy with specific focus on the packaging industry. In 2017, the divisional sustainability team started developing a strategy to unite the Group and divisional sustainability goals and commitments and to prioritize and make the contributions more efficient (Oksanen, interview 28 November 2017). Before a divisional sustainability strategy is in place, measurement of long-term contributions of the divisional sustainability commitments is not possible.

### **6.1.2 External Stakeholder Review to Prioritize Sustainability Work**

In 2017, Stora Enso Group decided to validate and update its Sustainability Agenda and more strategically integrate sustainability into the business and thus carried out a Group level focused sustainability materiality review. In this review, external consultant company conducted a survey with responses from 124 stakeholders relevant for Stora Enso around the world (Sustainability Report 2017, 6.) The results gave valuable information from the stakeholders and the anticipated priority areas for the future.

Additionally, the Consumer Board Division conducted a similar kind of stakeholder analysis around materiality topics to rank the current sustainability priorities for the Division. By this, the stakeholder engagement and the addressing of relevant topics could be ensured for the business. While the Group materiality analysis focused on a range of key forest industry stakeholders (governments, investors, media, suppliers, NGOs etc.), the divisional review focused on the packaging value chain and industry stakeholders. (Sustainability Report 2017, 7).

With the materiality survey, the CB Division wanted to identify expectations and issues that are material to customers, brands and retailers in particular. Furthermore, the review provided evaluation of future sustainability challenges and opportunities in the packaging industry as well as the implications for the Division. Also, it initiated and continued

productive conversations with stakeholders, while raising the profile of Stora Enso as a sustainable packaging solutions provider.

Each customer has distinctive sustainability ambitions and focus areas and thus not all of them can be addressed with same priority by the Division's available resources. Hence, the CB Division wanted to identify three most material sustainability issues which are most relevant for business and stakeholders. The most important sustainability concerns identified in the survey included human rights and business ethics, global warming, sustainable forestry, circular economy and responsible sourcing (GlobeScan 2017).

Based on the perceived sustainability performance and the recommendations from the stakeholder review, the Division has decided to raise three key material areas to focus on. These include human rights, global warming and circular economy. Hence, the Division sets emphasis on projects relating to the identified areas. These efforts can cover for instance increasing the engagement within the local communities in proximity of the mill areas, optimized use of process side streams in mills (circular ecosystems) and increasing of the resource efficiency of packaging products.

### **6.1.3 Legislation, Regulations and Certificates**

Sustainability plays a key role in the Stora Enso's corporate governance and therefore a Sustainability Policy was developed to articulate Stora Enso's overall approach to Sustainability and the related governance model. The Code of Conduct as well as related guidelines, issue specific policies and statements set the operational frames, guide the workforce and elaborate the organization's approach. (Sustainability Report 2016, 4.) The legislation, regulations and guidelines framing the operations of CB have been introduced in the Sustainability management framework in figure 6.



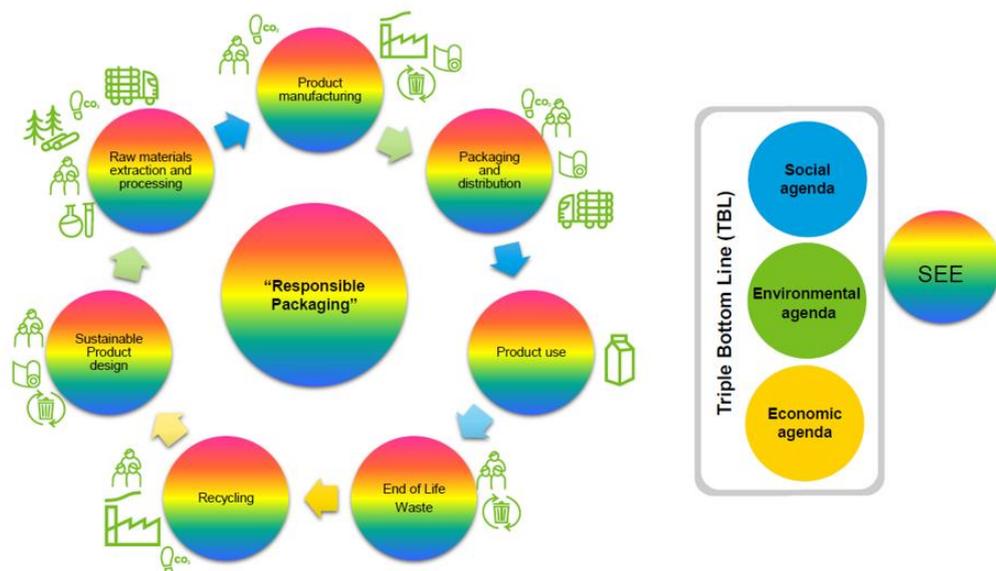
**Figure 6.** Consumer Board Sustainability management framework.

The Division complies with all applicable legal and regulatory obligations in the countries it operates in. The United Nation’s Guiding Principles on Business and Human Rights and the Sustainable Development Goals (SDGs) set a framework on which every enterprise should build their social sustainability targets on (UN 2011, 1 ; UN 2017, 2-3). The Stora Enso human right commitment extends from employees and on-site contractors to local communities living near the Stora Enso’s operations (Sustainability Report 2016, 9).

Following the legal and regulatory foundation, the sustainability operations are controlled by different SE policies, OECD and IFC standards, UN Global Compact principles, SEDEX, and a range of certifications including ISCC+, FSC and PEFC for instance. To set collective targets and objectives for the Division, management systems such as ISO 14001, ISO 50001 and OHSAS 18001 are deployed. To measure and monitor the performance, the Group and Division level targets and Key Performance Indicators (KPIs) have been set. These are then translated into monthly, quarterly and annually published reports for internal and external use.

### 6.1.4 Existing Measurements and KPI targets

Before starting the development of a divisional agenda for Sustainability, the SE CB Division has interpreted the Group Sustainability Agenda through the lens of Responsible Packaging with focus on product sustainability. This builds upon the Division's product lifecycle approach presented in the figure 7 below. This lifecycle and the related value chain processes build to the sustainability footprint of the Division. Sustainability performance is measured with the triple bottom line dimensions in mind. The performance is monitored with the Key Performance Indicators (later KPIs).



**Figure 7.** The Responsible Packaging lifecycle of the Consumer Board Division.

For efficient monitoring and evaluation of improvement, the different KPIs measure various material aspects of the Responsible Packaging product lifecycle. Many of the KPIs represent traditional engineer-based measures where the inputs and Division's invested resources are being monitored. By the outside-in perspective described in the theoretical concepts, the KPIs of a Net Positive company should aim to measure the output impacts created. The sustainability targets and key performance indicators of Stora Enso Group have been provided in the Appendix 6 whereas the SE CB Division specific targets and indicators can be found from the Appendix 7.

As it can be seen from the appendices, some of the materiality areas have multiple KPIs and some only one KPI to monitor sustainability contributions. In addition, most of the KPIs are high-level and focus on the Group's overall performance. Six KPIs are specific for the SE CB Division. These indicators are mainly operational process related and cover the materiality topics of "Materials, Water & Energy", "Forests, Plantations & Land Use" as well as "Customers". During 2018, the Division aims to develop new Sustainability KPIs to align the measurements with the key material areas. For the material topics, the Division should generate KPIs to measure outputs and contributions made instead of resources placed to these areas.

The KPIs have been set to measure and monitor the efforts and improvements made throughout the year. Some KPIs are being monitored on an annual basis whereas some are monitored monthly or biyearly every six months. The KPIs measuring truly sustainable business commitments should not be measured more frequently than annual basis due to their long term nature. These KPIs require solid and persistent foundation without evaluating the success of the contributions with a short-term perspective.

The data received from the KPIs is then consolidated into internal and external reports on a monthly, quarterly or annually basis depending on the stakeholder preferences. These reports follow the G4 reporting framework built by Global Reporting Initiative (GRI) to guarantee that organizations have the most up-to-date and best guidance for effective sustainability reporting (GRI 2015, 3).

In addition to operational KPIs, the Division uses LCA analysis excessively to assess product level sustainability in line with the responsible packaging life cycle approach. Most of this analysis is focused on carbon footprint but also water and other environmental frames are used. (Laihanen T. meeting 4 January 2018.) The LCA analysis is typically not target or KPI driven, but rather assesses the present situation in terms of product level environmental performance.

## **6.2 Internal Survey of the Management**

The Sustainability Team acknowledged a discrepancy in the internal awareness level of the current state of the Sustainability (Oksanen, meeting 23 January 2018). Without a fair level of divisional understanding and awareness of what Sustainability is and what the stakeholder expectations are, the value created through Sustainability diminishes. Thus, in order to determine the level of knowledge and the perceived state of sustainability in the organization, an internal survey was conducted for the thesis.

These kinds of surveys have not been conducted in the Division before. The survey covered sustainability topics like value creation, corporate attitude and focus, strategy and leadership, stakeholder engagement and transparency to name a few. The findings and related statistics have often been expressed as number of respondents for ease of interpretation. The shades represent the levels of the BST framework lightest being the lower level of business sustainability and the darkest being the top level of BST. Please note that given the limited sample size of n=21 out of 44 participants, differences should be interpreted as directional and not absolute. The survey can be further studied from Appendix 4.

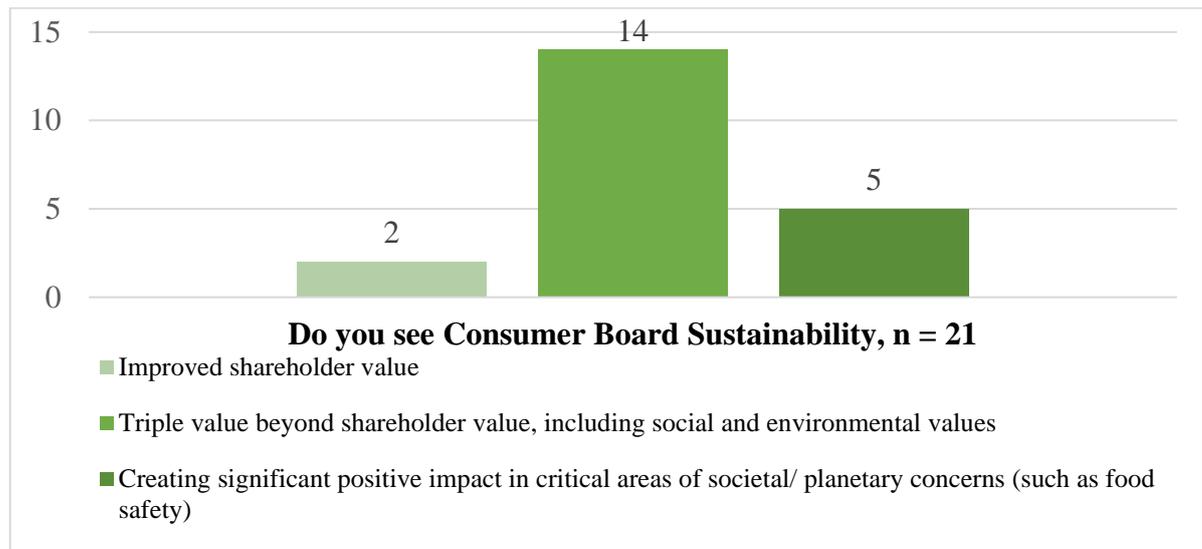
### **6.2.1 Current Business Structure and Value Creation of the Division**

Starting from the positioning of the CB Division in terms of Sustainability. Categorizing the markets divided the respondents into half; one half saw the Division reacting to challenges raised in the traditional markets and outside of its influence, whereas the other half saw the Division pro-actively exploring new opportunities outside of its traditional markets. Similarly, the leadership and governance of the Division's Sustainability processes could not be straightforwardly categorized into any levels of Net Positivity and BST as the responses varied a lot.

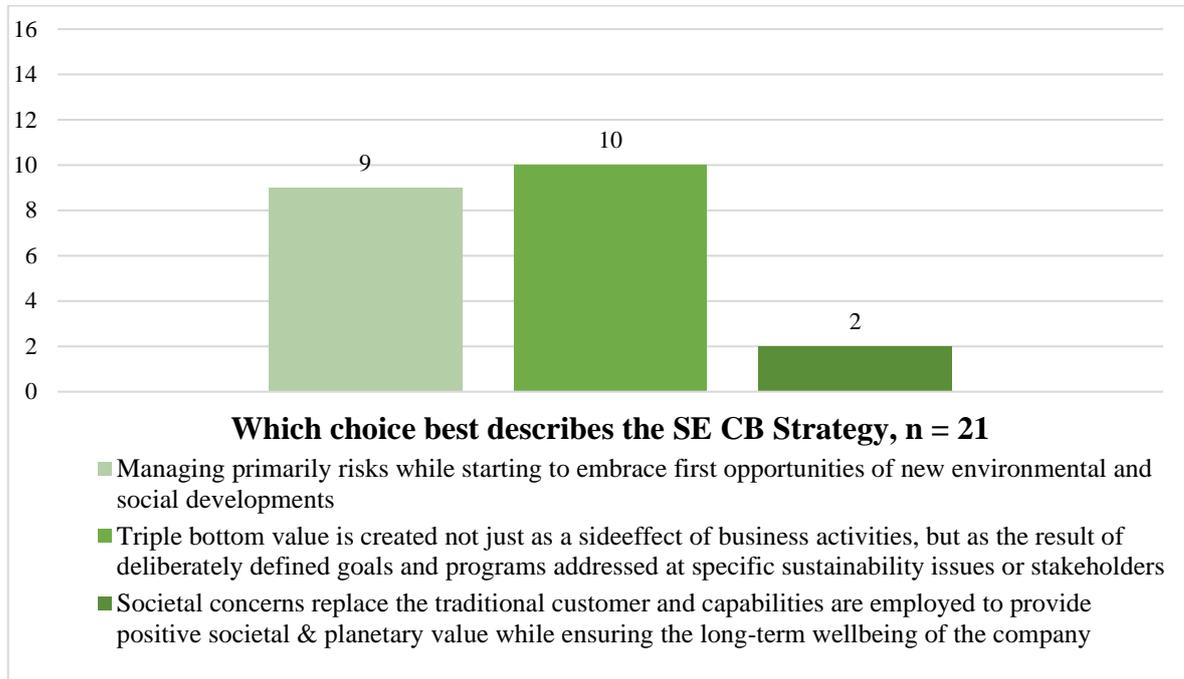
Furthermore, the perceived reactivity echoed a clear uncertainty of the current state; almost four out of ten saw the Division reacting only to outside pressure coming from stakeholders, nearly one third observed the Division actively exploring and exchanging ideas

with stakeholders and similarly one third pro-actively and voluntarily interacting with stakeholders and new players on the market. Nevertheless, a vast majority (see table 6 below) perceived that CB Sustainability does not only generate shareholder value but contributes to triple value including the environmental and social dimensions.

**Table 6.** The perceived value creation of the CB Division's Sustainability Agenda.



Another split into two response was received from the perception of the Division's sustainability strategy (see table 7 below). Nearly half of the respondents considered deliberate and purposeful sustainability programs on specific sustainability issues to result in expanded value creation. In turn, one response shorter, the Division was seen as mainly having risk management with some indications to embrace opportunities of environmental and social developments.

**Table 7.** The overview of the Sustainability and the relating strategy.

Supporting the responses above, it has to be noted that key business units and Divisions value differently materiality topics. Therefore, sustainability efforts have different areas of focus. Consequently, the ownership of the strategy was observed to be centralized to relevant key business/organizational teams. Hence, a correlation can be found on how sustainability is implemented into the existing strategy and how the sustainability is governed.

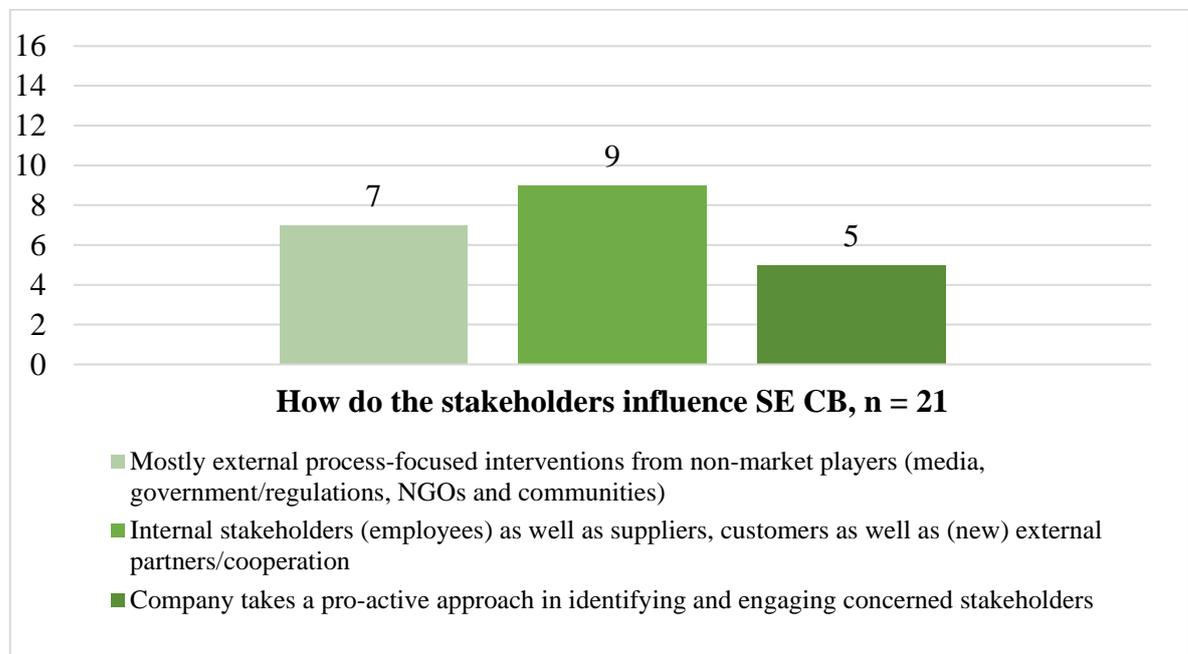
If the societal concern perspective would have received more hits by the respondents, the decision making structures of the business units would have most likely received different answers as well. In case the governance and leadership had taken along relevant societal stakeholders into the decision making processes, the whole business model would be differently structured. Answers indicating this kind of model would have connected to true business sustainability level. However, the responses support the typical inside-out perspective of a commercial business where the profit maximization still plays the key role in decision making.

### 6.2.2 The Collaborative Mindset

The CB Division emphasizes stakeholder engagement in its operations. According to the internal survey however, majority of respondents (48 %) still considered shareholders to be the primary focus. One third observed that all stakeholders are truly being targeted on and a fifth of the respondents considered the society and the planet as the top focus. Thus, these results suggest that business objectives are, for the most part, aimed at shareholder value creation.

That said, when formulating the query in a different way, the responses give somewhat different results. Given in the table 8 below, approximately three out of four of the respondents perceived that key stakeholders influencing the Division were the ones through the value chain and the operational environment. Five respondents saw that the Division is pro-actively identifying new concerned stakeholders and engaging with them.

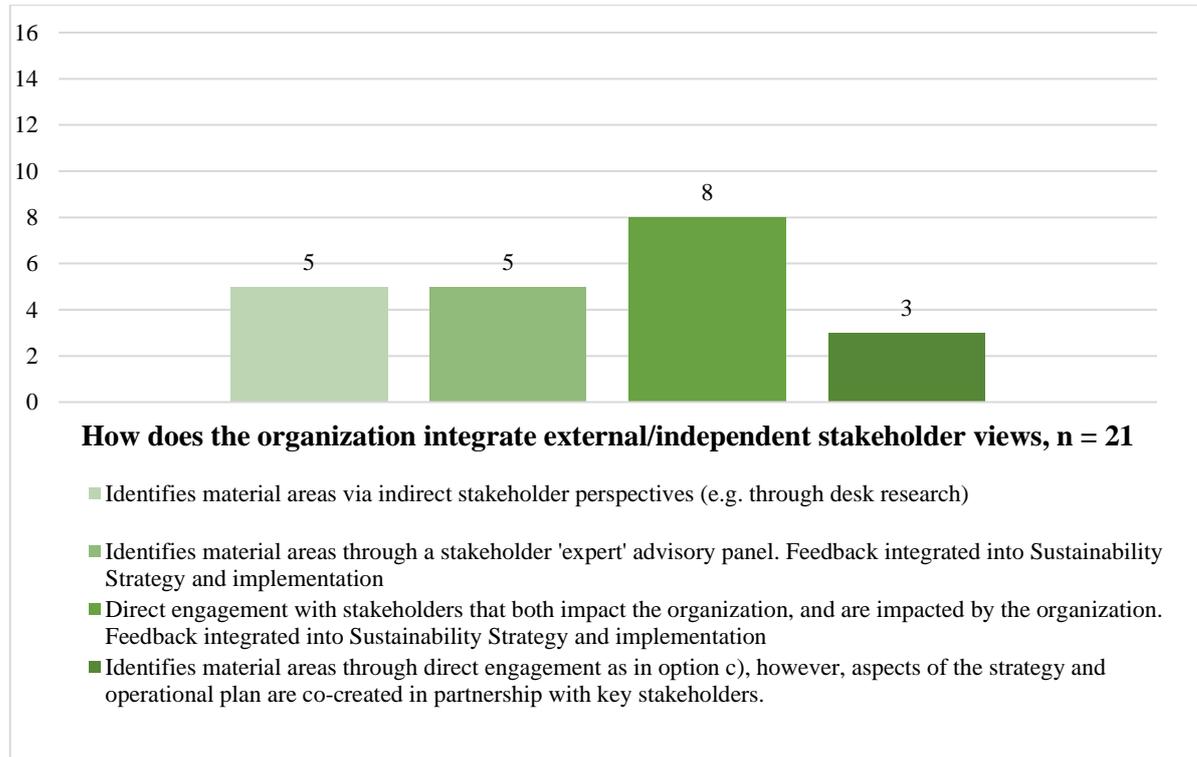
**Table 8.** The perceived stakeholder influence on the CB Division.



Furthermore, table 9 below represents the diversity of the perceived methods to take into consideration the issues raised by external stakeholders. In this table, four different answer choices were derived from the Net Positive Maturity Matrix, the lightest shade representing

the lowest level of BST and the darkest shade the highest level. According to the criteria, the middle two bars are estimated to indicate the BST 2.0 level.

**Table 9.** The perceived integration of the stakeholder concerns.



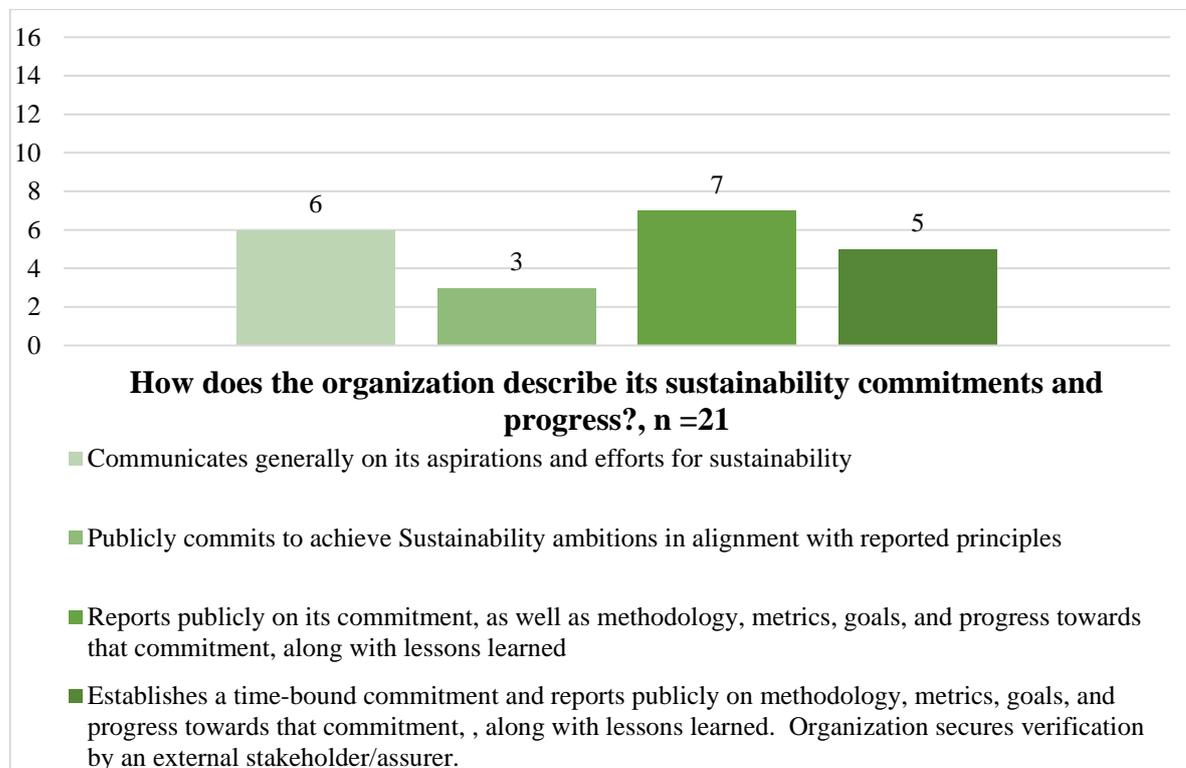
The concerns of stakeholders are either identified through desk research or by consultancy companies according to majority of respondents (approximately half of the responses). Also direct engagement with the value chain partners and stakeholders that are impacted by the Division's operations is used to collaborate and integrate the feedback into sustainability work.

Thus, the responses are indicating that the Division's way of doing business results in expanded value creation. The Division has clearly understood the wider range of challenges which the business faces. The shareholder value maximization is not the only aspect to be addressed. Even though the primary focus might lie within the value creation for shareholders, also stakeholders directly impacted by the organization are taken into consideration to some extent. This inevitably widens the Division's outputs to include non-business targets which speaks for the BST 2.0 level.

### 6.2.3 Transparency of the Ambitions

The transparency and reporting of sustainability commitments is a way to build trust amongst the stakeholders. Two thirds from the respondents of the survey observed that the CB Division communicates generally the efforts and aspirations with methodology, metrics, goals, and progress towards these commitments. However, the discrepancy of the results is quite extensive (see table 10 below).

**Table 10.** The perceived integration of the stakeholder concerns.

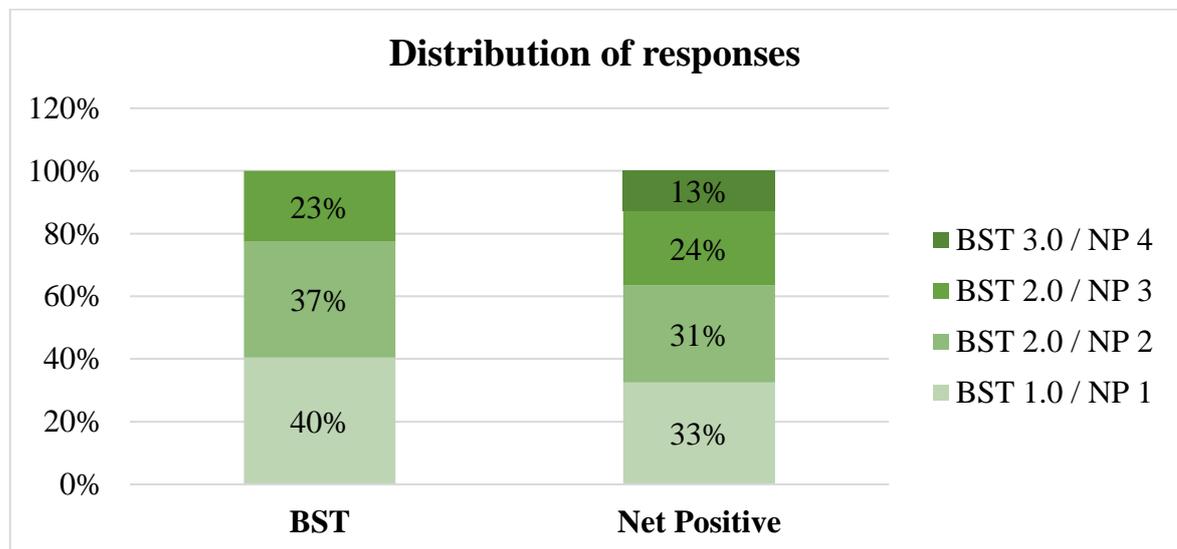


Quarter of the respondents saw that the commitments are time-bound and three respondents saw the alignment of the ambitions with the reported principles. On the other hand, it was generally accepted (nearly three out of four respondents) that the Division does not well describe negative impacts of the sustainability commitments or failures to mitigate negative impacts. The impacts are mainly reported as relative measures like “a ratio of contribution to footprint” for instance.

Thus, even though the external reporting follows the GRI standards and generally accepted guidelines, the survey results echo the ambiguousness of the sustainability topics in general. The versatile responses represent how differently the organisation's sustainability topics are interpreted therefore suggesting that the commitment are unclear inside the Division and amongst the workforce.

### 6.3 Locating Consumer Board into the True Business Sustainability Grid

The internal assessment of the perceived current state of the Consumer Board Division's Sustainability does not only provide relevant information regarding the opinions of the staff. The internal survey has also provided a scale to reflect the current state into the theoretical concepts of Business Sustainability and Net Positive. In the figure 8 below, the survey responses have been scaled to these two concepts. Given earlier in the discussions about the levels and in the combined grid of these concepts, the four levels of Net Positive can be scaled to BST so that the two middle levels are interpreted to correspond to the BST 2.0 level.



**Figure 8.** Responses contributing to BST and Net Positive.

The multiple choice survey consisted of eight BST related questions and six Net Positive related questions which were converging in nature. Therefore, the BST 1.0 responses have been summed up and divided by the total responses to BST related questions. As an example,

68 responses were linked to BST 1.0 level from a total of 168 BST responses and so forth. Overall, it can be concluded that the lower levels of sustainability received majority of the responses whereas 10 % to 20 % of respondents located the Divisional sustainability operations to the higher levels of BST and Net positive.

The internal survey provided necessary background regarding the awareness and knowledge of sustainability and the Sustainability agenda in the Division. Additionally, the analysis provided strategic information for the Sustainability Team about the areas of improvement. In general, the responses received echoed a good understanding of the requirements to be a sustainable business. The lack of proper divisional metrics for sustainability, the profit-orientation of the company and missing the correct mindset for executing true business sustainability were the biggest concerns perceived by the respondents. On the other hand, the responses to multiple choice questions revealed that there exists a clear discrepancy in the perception of the current state of Sustainability in the company and Division and divisional commitments towards Net Positive.

Concluding from the assessment of the current targets, metrics as well as the received responses from the internal survey, the Division's Sustainability status can be reflected to the True Business Sustainability Grid. There are cases where the responses showed a wide discrepancy amongst perceptions and the areas where multiple views were expressed with two or more levels of BST in the grid. The responses with univocal results thus have only one clear level identified. The interpretation of the survey results is presented in the table 11 below.

**Table 11.** The research results transferred to the True Business Sustainability Grid.

Criteria	Business Sustainability 1.0	Business Sustainability 2.0		Business Sustainability 3.0
	Net Positive Level 1	Net Positive Level 2	Net Positive Level 3	Net Positive Level 4
Materiality	Addresses <b>most</b> material area. Any negative impacts created by <b>this approach</b> are also addressed.	Addresses the <b>two most</b> material areas. Any negative impacts resulting from <b>either issue</b> on another material area are also addressed.	Addresses <b>three most</b> material areas.	Addresses <b>all</b> material areas. Net Positive strategies focus on <b>all material areas</b> . A <b>positive impact in one material issue cannot compensate for the negative impact or 'footprint' in another material area</b> .
Stakeholder engagement	Identifies material areas via <b>indirect</b> stakeholder perspectives (e.g. through desk research)	Identifies material areas through a stakeholder <b>'expert' advisory panel</b> .  Feedback integrated into Net Positive strategy and implementation	Identifies material areas through <b>direct engagement</b> with stakeholders that both impact the organization, and are impacted by the organization.	Identifies material areas through <b>direct engagement</b> as in Level 3, however, aspects of the strategy and operational plan are <b>co-created</b> in partnership with key stakeholders.
Sustainability implementation	Focuses on the strategy of <b>one key</b> business unit or part of the organization. Ownership of strategy is that <b>one team</b> or the Sustainability Team.	Focuses on the strategy of <b>two or more key</b> business units or parts of the organization. Ownership of strategy includes with those <b>key business/organizational teams</b> .	Addresses net positive <b>organization-wide</b> and integrates net positive into core organizational/executive governance.  CEO owns the strategy.	<b>Transforms existing business model</b> to outside-in perspective  Every head of department is <b>accountable for a piece of the strategy</b> . Relevant societal representatives integrated to decision-making
Collaboration	<b>Seeks information</b> from value chain partners directly relevant for net positive ambitions.	<b>Collaborates</b> with value chain partners to jointly pursue net positive-relevant outcomes.	Collaborates with partners to define and advance value chain-wide approaches to net positive.	<b>Broadly collaborates</b> to effect net positive system-wide change through large scale collaboration aimed at defining and pursuing net positive outcomes
Scope	Addresses <b>direct</b> impacts	Addresses <b>cradle to gate</b> impacts	Addresses <b>cradle to grave</b> impacts	Addresses <b>all the systems</b> raised in the materiality assessment that the organization influences (e.g. lobbying, public affairs, etc.)
Innovation	<b>Raises awareness</b> of net positive concept as aspiration for sustainable innovation	<b>Integrates</b> net positive ambition and analysis into R&D and go-to-market	<b>Pilots and launches</b> innovative offerings based on net positive ambition and analysis	Makes <b>fundamental changes</b> to core offering(s) and innovates new approaches to achieve net positive impacts
Transparency	<b>Communicates generally</b> on its aspirations and efforts for net positive	<b>Publicly commits</b> to achieve NP ambition in alignment with principles	<b>Reports publicly</b> on its commitment, as well as methodology, metrics, goals, and progress towards that commitment, along with lessons learned	<b>Establishes a time-bound commitment and reports publicly</b> on methodology, metrics, goals, and progress towards that commitment, along with lessons learned. Organization secures <b>verification</b> by an external stakeholder/assurer.

The True Business Sustainability Grid consists of seven converging criteria from the presented theoretical concepts. Both the academic work on business sustainability as well as the concept of Net Positive possess more criteria which could be used to evaluate ones sustainability operations further. The remaining criteria can be found from appendices 1 and 3.

For the first criteria, materiality, the Division acquires a Net Positive level of 3 which in turn results as a strong BST 2.0 level. This score is based on the existing KPI metrics established solely for the CB Division. These KPI indicators covered three material topics of “Materials, Water & Energy”, “Forests, Plantations & Land Use” and “Customers”. The highest score in the grid would require the Division to address all the ten material areas with the ambition to have net positive contributions in that field.

The Division acquires a score of BST 2.0 in the grid for the stakeholder engagement criteria. Due to the variant responses from the internal survey, this criteria translates into Net Positive levels 2 and 3. Even though the Division emphasizes the stakeholder engagement, the integration of the stakeholder views are often carried out by desk research, consultation or

grievance channels. Direct engagement with the stakeholders is carried out mainly inside the value chain from which the feedback is integrated to strategy inside the Division. In the highest form of BST and Net Positive, the key stakeholders would influence the strategy with co-creation and operational planning.

When it comes to the different divisions in the Stora Enso organization, the strongest and most ambitious sustainability efforts stem from the Consumer Board Division. In each Division, there are teams that are responsible for sustainability reporting to divisional executive vice presidents. In other words, there are five key business units in the organization that are being focused on in the ambitious sustainability commitments. If the scope is narrowed to consider only the CB Division, the net positive strategy will initially aim to focus on priority cases where the positive contributions are distinguishable. Thus, the Division receives a level 2 score in Net Positive and a weak BST 2.0 result. For a better score, all the Division-level operations would need to be considered from the positive contribution perspective. In turn, at the Group-level the concept of true business sustainability and Net Positive would have to be considered organization-wide.

As per given in the stakeholder engagement criteria, the Division's operational collaboration focuses on the packaging value chain. Direct engagement with other partners, customers and consumers focus on pro-active forecasting of sustainability demands and user preferences. Thus, from the sustainability point of view the collaboration with internal stakeholders, suppliers and contractors is adequate enough to reach the Net Positive level 1 and 2. This in turn, results as weak BST 2.0 score. As with stakeholder engagement, to reach higher levels of business sustainability the field of collaboration needs to be broadened from value chain to system-wide, large scale partnerships. Net Positive engagement with key customers offer a possibility to advance the score. However, any joint ventures still remain unpublished.

If an organization addresses the upstream and downstream impacts through activities including and beyond operations, the organization could be categorized as truly sustainable business by the scope of the company. The CB Division can be considered to address impacts with the cradle-to-gate scope. For instance, emissions from directly owned operations as well as externally purchased electricity and heating are being calculated and reported.

However, the scope 3 of the calculations are estimates and often perceived non-material and therefore not publicly reported. Thus, the Division receives a Net Positive level 2 and low BST 2.0 score by the criteria.

The innovation criteria is a challenging aspect in the grid. The Division has very ambitious research and development ongoing around the micro fibrillated cellulose (MFC) and lignin to respond to the customers' demands of new sustainable renewable products. However, these operations have not yet integrated the Net Positive vision into the innovation processes. These innovations are very much consumer demand driven, even if sustainability is a key driver for them. Thus, the criteria receives a score of Net Positive level 1 and BST 1.0. When the innovation stage gate processes integrate the Net Positive mindset into the research and development, the pilot projects will need to address global challenges instead of consumer preferences. By this shift in perspective, the level 3 and 4 can be rather easily achieved by the already existing research and development activities.

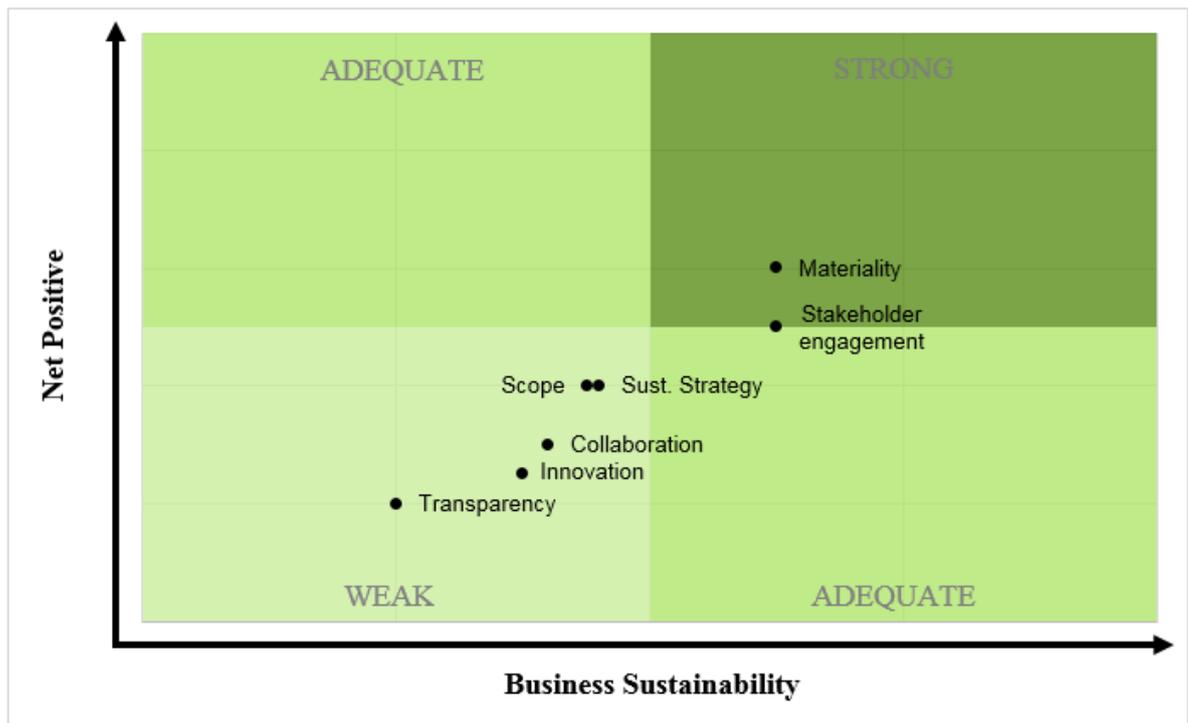
The final converging criteria in the True Business Sustainability Grid is transparency. The Division's Net Positive membership being very recent, the Division has not yet reported the aspirations regarding this collaborative initiative. Thus, the Net Positive level 1 and BST 1.0 score. However, internally the Net Positive is being communicated by the Sustainability Team and new opportunities are being evaluated inside the operations. In general, the company reports publicly on annual basis its ambitions aligned with principles, commitments, methodology, metrics, goals, and progress towards achieving these commitments. Thus, setting Net Positive aspirations, developing methodology and metrics to monitor the progress and exploiting the existing reporting protocol would lever the score even to strong BST 2.0.

#### **6.4 Strengths and Weaknesses Based on the Research Results**

The insight provided to operations and the external and internal surveys enable us to position the Division to the levels of business sustainability in the True Business Sustainability Grid. In some criteria, the Division could already be given a high Net Positive and BST score

based on the existing sustainability efforts. In turn, several criteria did not meet higher than the first level score due to the early stages of the Net Positive membership. Therefore, it is necessary to determine the strengths and priority areas of improvement for the SE CB Sustainability.

The figure 9 below illustrates the scoring of the different criteria in the study. Since frameworks are rather tricky to combine straightforwardly, the two concepts and the corresponding levels of criteria have been scaled to the axes. The bottom left corner represents the weak level of commitments towards Net Positive and BST and the top right corner the strong sustainability commitments. As the BST and Net Positive level get better, the scores reach closer to the top right corner in terms of the true business sustainability and Net Positivity.



**Figure 9.** Scaling the research result.

The figure shows that only materiality can be considered to be in the strong sustainability region. This is due to the material topics assessed from the tripartite perspective. Stakeholder engagement receives the second highest score as the cooperation and recently conducted

reviews support the fact that the key stakeholders are in a strong position to impact the Division's direction.

Inside the Division, the Sustainability Team is functioning across business units and collaborates with most relevant partners, thus the sustainability strategy and the scope of sustainability assessments reach almost the adequate level (where the score is above the mid-point in both concepts). As earlier discussed, the innovation and the transparency (communication) receive a low scoring due to the initiation phase of the Division's Net Positive commitments. By integrating the mindset to these operations, the criteria would reach to the top right area of the table.

According to the results of this study, the SE CB Division should be focusing on transparent reporting of sustainability commitments, targets and performance as well as the direction of development. It should not be only publicly communicating what is intended and what is done. Instead, the reporting should reflect the value created for common good with success stories of the beneficiaries. However, such reporting and transparency requires meaningful contributions. These time-bound commitments and other recommendations for developing the SE CB Sustainability will be discussed next.

## **7 DISCUSSION AND RECOMMENDATIONS**

The typology for true business sustainability has been under development since the beginning of 21<sup>st</sup> century and today offers a list of characteristics to help the organizations to measure sustainability, its success and areas of improvements. The Net Positive Initiative on the other hand has been developing as an idealist movement for half a decade and similarly has developed a Net Positive Maturity Matrix to give the organizations a scale to evaluate their sustainability efforts. The movement possesses a lot of similarities to the theoretical framework of true business sustainability and especially the business sustainability (BST) 3.0 level.

As the Dyllick's and Muff's business sustainability and the Net Positive Group's movement resemble each other, the Net Positive movement can be considered as a continuum for the realization of the true business sustainability typology. With the True Business Sustainability Grid created for this thesis, the Consumer Board Divisions Sustainability could be assessed and the areas of development were identified.

## **7.1 Opportunity for Stronger Business Sustainability**

Since the Division has joined the Net Positive Initiative, it showcased the SE CB's vision and the ambition to strive for better sustainability efforts. According to the study, the Division is currently positioned in the first two phases of the net positive development process: setting strategical targets and creating metrics. The next phase would be to execute the commitments set. Big milestones for the Division would be generating a well-defined and relatable Net Positive strategy, setting relevant targets for the future and generating metrics to monitor and follow up the contributions intended.

The net positive mindset, and being part of the Net Positive movement, brings a new perspective to the Division's processes and the impacts assessed. This mindset to create positive impacts can be applied throughout the business units of the organization and the value chains. However, as the Division is now in the process of developing the Net Positive ambitions, it is recommended that the impact assessments are focused on some well-defined unit processes or operations. Such example cases could include assessing the over-all climate impacts of Fors Mill against some reference mill or calculating the handprints of some of SE CB's renewable packaging materials. From these pilots, the assessments could eventually be scaled to consider entire entities and the whole organization.

The perceived importance of climate change and the responsible sourcing in the Globescan materiality review are some essential areas of improvement to be considered in the development phase of the Net Positive strategy. The aspect of climate change was recorded important amongst the stakeholders, but the Divisional performance was perceived non-adequate. The same applied for responsible sourcing. Even though, the Division and Stora

Enso has ambitious goals, such as the science-based targets, and has the wood supply chains covered by forest certification schemes, the ineffective communication clearly hinders the perceived performance amongst stakeholders. Thus stronger marketing, knowledge-sharing and collaboration needs to be developed to share the successful sustainability performance of SE CB Division.

Furthermore, the study results related to stakeholder engagement and collaboration criteria indicate that the shift to stronger sustainability levels can only be achieved with more regular collaboration within and outside of the value chain. By having the vision and willingness to respond to global challenges, much bolder commitments on sustainability can be set. Additionally, paying attention to reporting and making sustainability tangible, understandable and relatable within the organization are areas where the Division needs to develop.

### **7.1.1 Implementing Net Positive in the Division**

One of the most important factors for the implementation and integration of Net Positive into the Division is having a strong and understandable sustainability strategy. Without a Sustainability Strategy, hence also a Net Positive strategy, the contributions made are disconnected efforts with no clear purpose and prevent long-lasting measurable impacts. However, just having a rigid strategy does not guarantee success in sustainability. The way the strategy is implemented plays also a very important role in the prosperity of any sustainability contribution.

A successful implementation of the Net Positive movement starts from a thorough understanding what the net positivity really means for the CB Division. By the results from the internal survey, the sustainability concepts are a mishmash for any who does not handle sustainability topics as a profession. Thus, the comprehension of Net Positive, its requirements, Divisional ambitions and actions required need to be clear for the Division's Sustainability Team and also for the divisional leadership team in its entirety. Only after, any Net Positive effort and its implementation can be initiated.

As said, the jargon of the definitions and the disconnected metrics from the sustainability world create confusion and doubt both internally and externally. In the internal questionnaire, a group of respondents agree that the sustainability should be a mindset which is integrated to Stora Enso's core business driving the way the company operates and engages with internal and external stakeholders. Instead of a high flying agenda and terminology, the language and actions need to be presented in a way that majority understands and relates to them. Thus before the implementation of any Net Positive contribution, the Sustainability Team of the Division should focus on bringing the whole concept of sustainability more down to earth and relatable. For instance, univocal performance indicators or sustainability workshops for employees would address the confusion in terminology.

Once high flying sustainability has been made to more relatable, the Sustainability Team can much better implement projects relating to Net Positive and Sustainability in general. With understandable goals and definitions, staff throughout the Division and its value chain can be educated on the ambitions, processes related to targets and the roles of every individual. The better the employees are educated and the more the knowledge of Net Positive is shared, the stronger the employees can be committed to the ambitions. Such education can be executed through HR-training, web-exercises or information events. Knowledge sharing, on the other hand, can be provided through the organization's intranet, quarterly published Stora Enso World magazine, the annual reports or such.

The education and knowledge sharing is not bounded only to the internal stakeholders, such as employees of the Division. As per the Net Positive principles, the shared knowledge of best practices and lessons learnt should also be made publicly available for external stakeholders as well as shared in collaborative networks. Such data sharing through partnerships would not only benefit the external entities, but also bring valuable information to the Division. With the shared knowledge, the Division could also find new useful good practices or identify new relevant global issues. This kind of transparency would build trust and acceptance of the Division's operations amongst the external stakeholders and additionally it would benefit the whole development of the Net Positive movement.

Both concepts emphasize the fundamental shift needed from the organizational perspective to do business: instead of the traditional inside-out approach, the organizations should ask themselves how they can create positive impacts to overcome critical challenge of the society and the planet. However, such fundamental shift can be merely impossible for a global commercial business like Stora Enso. A middle ground proposal for traditional organizations (in this case the CB Division) could be to consider the inside-out and outside-in perspectives as a circular process of transition. In such a process, the organization would analyze the state of the existing global challenges in the world (the outside-in perspective) and then assess those against the organization's internal capabilities and resources to contribute positively towards them.

This kind of iteration would make the Net Positive contributions efficient and relevant inside the Division. In addition, the outside-in approach would be more plausible to succeed in a traditional profit oriented business as the shift from BAU is not so radical. These kinds of reviews would need to be conducted periodically to identify the most challenging issues and actions relevant and feasible for the Division to address them.

The described iteration was already adapted by the SE CB through the sustainability materiality review in 2017. However it should be noted, that the stakeholder attitudes do not necessarily reflect the most acute global challenges. The outside-in stakeholder review should also extend beyond closest stakeholder groups.

### **7.1.2 Cases for Net Positive Contributions**

In the sustainability focus area of circularity and recycling, the Division has set clear ambitions for the SE CB Circular packaging program. For instance, the un-recycled cartonboard in the post-consumer waste sector offers a lot of opportunities. In 2016, only about 47 percent of all beverage cartons in the EU were recycled with a 76% recovery rate (ACE 5, 2017). With improved collection and waste separation infrastructure for paperboard in EU, the Division could ensure the efficient recovery of cartonboard packages and reuse of fibers and promote Net Positive commitments on circularity.

Another great case for Net Positivity would be the re-utilization of the Division's food and beverage industry customers' side streams. Such side streams include spent grain and husk in the beverage segment as well as coconut and nut shells in the confectionery industry. By recovering and reusing the fibers otherwise ending to waste, CB could create a significant Net Positive success story from the described cases.

Narrowing the scope to mill sites, the operational side streams also offer possibilities for positive outputs. Currently, there are side streams generated from the Division's operations which could be better utilized to create positive impacts. These positive contributions, or handprints, could be for instance reducing the quantity of waste in side streams and better reusing these materials. Such methods would offer more advanced treatment options with smaller negative impacts than traditional landfilling or incineration.

A potential example of a more efficient utilization of side streams would be the exploitation of the ash produced from the Division's operations. Currently, this is not only the interest of CB Division but other divisions in the organization as well. The Imatra Mills produce some 12 419 tons of dry ash per year which could have better end-use applications than land construction projects (Oksanen, meeting 2 May 2018). The ash already has multiple utilization possibilities and thus the side stream also has economic value for the Division.

For instance, by offering the ash to road construction companies, landscaping companies or even to fertilizer companies, the Division could generate new revenues as well as create positive contributions to the environment when the side stream would not be regarded as waste any longer. Another opportunity for ash recovery could be its utilization in the bio-composites manufactured inside Stora Enso. Such application would be subject to feasibility study.

Additionally in the above mentioned applications for ash, the positive impacts extend to even further as the ash would substitute natural resources used for instance in the construction or landscaping processes. Thus, it would be suggested that the Division develops an indicator to measure its ash utilization. Developing further from the existing KPI of landfilled process waste (see Appendix 7), the Division could have a side stream utilization rate indicator for

ash and bark. In this case, these developed KPIs would monitor circularity of the Division's production processes.

The second key focus area of the Division is the global concern of climate change. The vision to meet the organizations science-based targets is to better utilize the bio-based resources in the energy production (Stora Enso 2018). Thus, a rather relevant measurement for the Division to align the operations with the Group level targets would be the utilization rate of the renewable energy sources. Here the baseline scenario could be either the case where the Division's energy demand is fully covered with fossil fuels or the energy type distribution of the reference year. The growing share and the substitution effect of utilizing renewable sources would then be measured for instance as avoided emissions KPI leading to derive the positive contributions concerning climate change.

An excellent success story and an example of the efficient utilization of renewable energy sources for the science-based targets is the Division's Fors Mill. The mill is virtually fossil free in its operations. The mill has two boilers burning biofuel which produce approximately 110 – 130 tons of steam per hour. The steam is exploited to produce the mill's own energy (60 GWh/year). Thus, the Fors Mill has some 80 percent carbon free emissions. (Stinessen, interview 24 May 2018.) Such example offers a great starting point for a handprint case.

Deriving from the avoided emissions indicator, an interesting indicator would be linked to manufactured products by Consumer Board and the avoided impacts against less sustainable materials. This would allow the Division as well as the customer to compare the products in terms of sustainability. Such indicator could assess the emissions avoided when switching from plastics to the SE CB Division's cartonboard products. As the global concern for plastics ending up in ecosystems is growing rapidly, an indicator measuring the substitution effect of the Division's products would give a competitive advantage. This indicator would both communicate the Net Positive contributions as well as it could also act as a winning argument with customers.

The third focus area of the Division in terms of sustainability is human rights. The organization has currently one KPI monitoring human rights. Therefore, the Division should

aim to establish more metrics in the field. The ramp up of the new Consumer Board mill in Guangxi region offers evidence on many projects associated with human rights and the social sustainability. Thus, the Division could use Beihai Mill as a case for a Net Positive social sustainability pilot.

China and the Guangxi region do not have trade unions as customary in the western world. The employment T&C and conditions vary a lot in China and employees are not treated in the same level as in Scandinavia for instance. (Ma, interview 13 June 2018.) Therefore, a great possibility for the Division would be to introduce these western working standards in operations in China, also in the supply chain. By educating, sharing knowledge and developing best practices, SE CB can contribute to improving social wellbeing of the region. This can be partly achieved by implementing the SE Supplier Code of Conduct, but the Division goes beyond this and better scale up the best practices through showcasing leadership and by knowledge sharing.

In addition, the Division could develop a pioneering concept connecting the West to the East. In this concept the Division would establish a collaboration network between a local entrepreneur or a service provider, with the community around the mill and employees of the Division. Such a module could fit to schools, health care service providers or even to activity centers enterprises. The Division would support the service provider either by supplying its products such as cups and packaging products, providing western knowledge and workforce to the region or by aiding the enterprise financially. By this, the Stora Enso employees would be allowed to bring their families to the discussed school, daycare or activity centers for instance. At the same time, these facilities would operate and be open for the locals. Such pioneering concept would need to be initiated by a collaboration with an acting NGO in the area for easier entrance.

This attempt of social integration could make the presence of the mill site more acceptable. It could also lower the barriers for employees with abroad assignments to take their family with them. This kind of module would exchange the knowledge of the two differing cultures, educate one another and benefit the society in general as a Net Positive commitment. As a

return, the Division could receive more potential and skillful employees from the region not forgetting the general acceptance of operations.

These examples show that the handprint can be measured for instance in areas of waste collection, recycling rates or recycled product content and even in community engagement. From the suggested examples, the stakeholders according to the materiality study would prioritize post-consumer waste management. Thus, this would be the natural focus area of the Division to start with. In this case, circular initiatives along the value chain (e.g. setting waste collection systems for cartonboard packaging and using this customer waste to re-create products) would have co-benefits and be well received delivering shared value.

### **7.1.3 Creating Metrics and Execution of Net Positive**

As already mentioned, creating new metrics and key performance indicators (KPIs) for the Division is needed for a successful deployment of Net Positive. The ambiguousness of the concept allows organizations to create rather freely the methodology for positive contributions and thus also the metrics can be rather proprietary. The Division has already established comprehensive metrics and monitoring systems for emissions in its operations. Therefore, the thesis suggests, as a start, to focus on developing KPIs primarily for the three focus areas. The development process can later shift to the ten material areas of the divisional Sustainability Agenda.

Given the Net Positive measurement framework, guidelines and not forgetting the Stora Enso's Sustainability Policies, the new KPIs have to be aligned with them. The Division has been focusing on reporting footprints (the cumulative negative impacts in a given area) as part of Group level sustainability reporting. However, with the Net Positive mindset, focus should also be given to handprints. These handprint measures can be ones that avoid the generation of footprint or simply contribute positively to the society and environment (Tynkkynen & Berninger 2017). Yet again, it should be remembered that according to the Net Positive principles, these handprints should not be used to compensate other footprints. Instead, they should be reported separately.

The linkages between Net Positive and the UN's Sustainability Development Goals (SDGs) are crucial. Given the early stage of the Net Positive framework, the Division has an opportunity to adapt the Net Positive KPIs rather freely within the paperboard business segment. Additionally, by addressing the global issues through SDG linked KPIs, the Division can ensure the relevance of the metrics. Moreover, the pioneering Net Positive examples by the Consumer Board Division can initiate a larger scale shift in other Divisions and eventually in the whole organization.

Appendix 8 sums up the introduced and suggested Net Positive examples by offering a new set of KPIs for the Division. The purpose of the indicators is to shift the perspective of the business to consider more the outcomes of sustainability engagement. The existing indicators are very much engineer-designed and focus on inputs and outputs during a fiscal year. Thus, the proposed KPIs attempt to initiate the shift towards outside-in thinking in the Division. The KPIs have been influenced by examples from other Net Positive Initiative members, and by refining existing KPIs towards Net Positive. The appendix connects the indicators to the divisional Sustainability Agenda materiality matrix with linkages to global sustainability challenges.

There are many different frameworks for sustainability metrics applied by different organizations. Some very relevant examples, for instance, can be found from other Net Positive members like Dell, Pepsico and The Crown Estate. As an example, such KPI indicators for human rights include:

- the monitoring of working hours
- ensuring the associated rest days
- ensuring proper wages and benefits amongst the labor force
- promoting gender equality in workforce and top management
- protecting digital identity and non-retaliation
- privacy

Yet again, the Stora Enso's Code of Conduct policy and Supplier Code of Conduct framework set a rather thorough frame to operate in and thus indicators could be developed from these policies. Additionally, the Division could derive similar kind of indicators as the

total community investment KPI in the Group level, except with an output-in approach. For instance, the positive impacts created through the community engagement in discussed regions would communicate the Division's ambitions towards the targets and the accomplished outcomes.

The development of a Net Positive strategy and an implementation plan should evolve in an organic manner within the organization. Hence, the Net Positive ambitions can be implemented with a step by step approach. Once the strategy for the three focus areas has been developed and the measurement tools established, the Division can cultivate the ambitions further. Based on the surveys, the next areas to address would be the responsible sourcing, responsible forestry and addressing the growing concern of plastics. Therefore, exploiting environmental product declarations, for instance, to develop an indicator to measure the substituting effect of the SE CB packaging products could contribute in the development of outside-in key performance indicators.

Considering the above also from the Net Positive side. By ambitiously creating indicators for measuring positive contributions, the Division has an opportunity to impact the direction of the Net Positive Project's development as well. Being a pioneer cartonboard industry participant in the NP movement, the Division could propose sector specific indicators and application methods if and when sector level Net Positive standards are developed. This would give the Division a competitive advantage in the markets as SE CB has been participating the development process of the standards. However, this can only be achieved by ambitious and determined actions towards establishing Divisional KPIs as discussed. With less progressive actions, it can be assumed that the other participants of the Net Positive Initiative will influence the standards as per their best interests.

#### **7.1.4 Monitoring the Net Positive**

The monitoring and measurement framework of SE CB Sustainability performance should be periodically reviewed to maintain its efficiency and relevance. The measurement framework can be structured to include the already existing KPIs as well as some of the suggested metrics of this thesis. However, due to the long time orientation of sustainability

commitments, the focus should not solely be in monthly and quarterly reporting but more in the annual performance or even longer. This would support the Division's sustainability development within a longer time horizon.

Collecting data and measuring results with the agreed KPIs is also essential for tracking the progress of Net Positive contributions in the Division. This can be considered as a part of the inside-out perspective through internal assessments of related capabilities and resources deployed to address global challenges. Learning from these assessments and shared experiences from others, the Division can re-assess its Net Positive related vision, strategy and implementation. By doing this, the internal resources and expertise can be more efficiently re-directed (if necessary) and utilized to contribute even better towards positive societal and environmental impacts.

Another great source of learning would be internal feedback from the implementation of Net Positive. The Sustainability Team should create a feedback system for the Initiative where the internal stakeholders can register learning results and experiences how the concept has been accepted in the organization. This could bring new ideas for Net Positive projects and provide feedback on the biggest challenges in the implementation. This feedback could be then used in the Net Positive implementation reviews to ensure the effectiveness of the program.

In the end, a collaborative mindset and transparent information sharing is essential for the Division. The Net Positive movement is based on a common goal to provide better sustainability practices to the business environment. Thus, openness, information sharing as well as sharing of lessons learnt will all play a key role in developing the Initiative. Reporting also the failures should be considered by the Division. It is not easy to publicly share unsuccessful initiatives. However, this kind of mitigative reporting can also serve as crisis communication. Failures provide experience and guidance for the Division and the other participants of the Net Positive movement.

According to Noel Morrin (Stora Enso 2016), the Group Executive Vice President Sustainability at Stora Enso, the organization needs to further improve the reporting and the

external assurance of the KPIs. By better integrating the non-financial sustainability aspects to the financial reporting, greater external credibility and internal reassurance could be achieved. However, the materiality methodology and the non-financial data assurance both need development before this integration. (Stora Enso 2016.) Thus, the Net Positive Initiative and the pioneer efforts around the concept of Total Contribution to Society (TCS) inside the company can be seen as attempts to develop consistency on materiality methodology as well as the monetization of these non-financial measures.

Building from the previous study on TCS by Garemark et al. (2017), adapting similar kind of TCS methodology as Crown Estate for instance could benefit the Division's Sustainability in the Leadership Team decision making processes. Derived from the PwC's Total Impact Methodology, the Crown Estate's total contribution methodology gives an economic value to the non-financial environmental and social metrics by applying a set of different literature methods to them (Garemark et al. 2017, 10, 24). Such method, where all the negative and positive impacts of the company are summed together, does not fit into the principles of Net Positive Initiative. However, using TCS as an internal tool would give the management a much deeper understanding of the organization's overall performance on sustainability. With TCS methodology, where the negative impacts are considered as costs and the positive as profit, the Sustainability Team could emphasize the importance of sustainability targets and could integrate the agendas to the revenue oriented decision making.

## **7.2 Limitations of the Research Results**

One of the biggest limitation of the study is the fact that the studied Division does not have its own sustainability strategy, but as all Stora Enso divisions, it has been guided by the Group Sustainability Agenda and strategy. This easily makes any sustainability pilots disjointed projects without very persistent divisional commitments to the global challenges. In addition, the Net Positive metrics related knowledge level of the divisional Sustainability Team is still fairly low.

This said, the differentiation of the higher BST and Net Positive levels for big commercial enterprise can be very challenging. As the study shows, the approach, priorities, implementation, measurement and the contributions of the SE CB are difficult to categorize into one of the BST levels. This is one of the biggest challenges in the introduced field of business sustainability as the conditions, when a company can be seen to be on Net Positive level 3 or level 4, are ambiguous and depends on the perspective taken.

The dilemma of the chosen perspective can be demonstrated through consideration of the boundary conditions when the cartonboard business is seen to have positive impacts on the environment and the society. The basis for packaging is to seal and protect products for different purposes such as storage, distribution and protection. Thus, by taking the food safety and food protection as a perspective the Consumer Board Division has a positive impact on the society as the provider packaging solutions that reduce the generated food waste and ensure a longer lifetime for the goods. Similarly, the Division's products (such as liquid packaging cartonboard and bio-based coatings) offer environmentally friendly alternatives to displace fossil-based plastic packages. This can then be seen as a positive contribution to both the society and the planet.

In turn, the Division's paperboard product circularity can be a drawback in terms of true business sustainability. Considering the recyclability and recovering perspective, many of the cartonboard packages which also contain fossil-based polymer coating are not properly recycled or reused. This creates negative impact as the cups and packages that end up to landfills or energy incineration. Thus, the point of view chosen can be deceptive if all of the perspectives are not fully considered.

Another limitation in by the study is the challenge of the existing commercially oriented businesses to implement true business sustainability and Net Positive. Firstly, one of the biggest barriers towards true business sustainability is the great lock-in of the business environment favoring the existing unsustainable system designs. Second, the investor driven short-term value-orientation make it difficult for commercial organizations to expedite true business sustainability even if interested. Thus, these barriers raise the question: are commercial businesses even able to make and implement fundamental changes in operations

to refocus the inside-out approach to address global sustainability challenges faced by the society and the planet?

Even though the Division may have great sustainability ambitions for the future, the internal survey shows that the primary focus lies on meeting the shareholder expectations and the operations are very much profit-oriented. Thus, a concern arising from the study is the question: How important are the positive contributions and directing resources to addressing global challenges for a multinational commercial businesses aiming for shareholder profit maximization? Or will creating value for the common good be the core business of social businesses only?

Therefore, one major point to consider is the return on investment (ROI) of addressing the sustainability issues. Profitability of sustainability investments is challenging to justify with the current way of thinking. In addition, implementing sustainability strategies and related investments requires a much longer time horizon, thus making the sustainability initiatives rarely profitable in monetary terms. However, even though the short-term profit is not guaranteed, a study conducted by Eccles et al. (2012) shows that BST companies outperform BAU companies both in stock and financial performance in the long run. This is a crucial fact in the modern profit-oriented business environment as it shows that the sustainability issues can be addressed without compromising the shareholder value.

### **7.3 Recommendation for further studies**

This thesis is a first attempt to clarify the concept of Net Positive and the related true business sustainability for the Consumer Board Division. Therefore, no thorough conclusions should be done based on this study alone. As the number of respondents in the survey is low, the results can be considered only as guiding outcomes. More extensive studies on the possibilities to initiate sustainability contributions with net positive impacts should be conducted.

For instance, the outside-in approach and the resulting shifts in the large commercial businesses are not well understood. The ambiguousness of the Net Positive concepts and the related sustainability performance levels create a grey environment where businesses are currently positioning themselves by the parameters which best suit their interests. Thus, further studies should be conducted to identify the industry specific best practice examples and criteria based on materiality. Only by doing this, it is possible to establish standards to classify sustainability performance of different companies in a given industry to the correct matrix level.

In addition, it should be noted that the True Sustainability Grid is designed to support the study, but can also serve in the development of the Net Positive Maturity Matrix. It combines only a hand full of criteria and the remaining business sustainability characteristics should be also studied and possibly used in the development of the Net Positive Initiative. Utilizing the BST criteria would link the Net Positive Initiative closer to the academic field which in turn could make the movement more generally accepted and trustworthy. However, developing the Net Positive Matrix is beyond the scope of this study and a second study would be necessary.

## 8 CONCLUSION

The consciousness and the concern of most pressing global sustainability challenges has modified the modern business environment. Nowadays, it is not enough to only minimize the negative impacts of the organizations and to react to the harmful impacts retroactively. Instead, businesses are also expected to create value for the common good through positive contributions to the society and the planet. This shift from solely avoiding harmful impacts to creating also positive outcomes has led to a new net positive thinking. This has also led to the development of academic works of net positivity, business sustainability and the Net Positive being few examples of it.

The typology of true business sustainability has been provoking thoughts since the beginning of 21<sup>st</sup> century and the framework today offers a list of characteristics to help the organizations measure sustainability performance and areas of improvements. The Net Positive Initiative has been developing as an idealist movement for half a decade and possess similarities in shifting the business perspective to creating meaningful positive impacts in material areas of society and planet.

After joining the Net Positive Initiative in 2017, the Stora Enso Consumer Board Division has been working to conceptualize how Net Positive could be deployed in the Division. The thesis has examined what the concept could mean for the cartonboard industry, especially for Stora Enso Consumer Board. Additionally, metrics and measurement tools offered by this new emerging sustainability initiative have been discussed. As a result, the study offers some cases, suggestions and key performance indicators suitable for the cartonboard business segment to meet Consumer Board Division's ambitions.

In the theoretical part of the thesis, a connection between the true business sustainability concept and the Net Positive Project has been established. The true business sustainability offers a three-level roadmap for companies to become businesses with truly effective commitments in sustainable development. Similarly, the Net Positive principles guide the members to have significant positive impacts in critical areas of society and the planet.

Therefore, due to the converging nature of the two concepts, a True Business Sustainability Grid was derived for the thesis to evaluate Consumer Board Division's current status. To support the findings made by literature review, a sustainability related survey was conducted inside the Stora Enso Consumer Board Division to examine the current sustainability commitments. Additional interviews with the Sustainability Team were held to provide deeper insight into the area of study.

With the current status, Stora Enso Consumer Board Division can be positioned to be on the second level of the business sustainability framework. In other words, the Division clearly manages the tripartite dimensions of people, planet and profit in their everyday business. This broadens the Division's value creation to include also nonbusiness targets. However, the traditional economic paradigm of profit maximization strongly controls the SE CB's decision making. Thus, the Consumer Board Division does not reach the higher levels of Net Positivity or business sustainability.

To truly realize the highest levels of Net Positive and business sustainability, the Division would require a fundamental shift from the organizational perspective. The thesis has discussed whether a global commercial company can ever make such shifts. Therefore, the study has offered the iterative assessment of the pressing global sustainability challenges followed by evaluating internal resources to maintain the sustainability efficiency and relevance. In addition, as a first step to align the sustainability work with the global sustainability challenges and thus the Sustainable Development Goals, the thesis has offered Net Positive cases in the most material areas of the Division. These cases can bring positive impacts in the areas of human rights, climate change and circular economy. Developing these cases further is highly recommended for Stora Enso Consumer Board Division.

The Net Positive Initiative has shown to offer a great starting point to trigger the outside-in considerations into a new level. For instance, by connecting the Net Positive contributions to the concept of Total Contribution to Society, the sustainability commitments could be monetized. This would be an internal solution of any profit maximization driven company

to link the non-financial sustainability contributions to the operational decision making and thus integrate the sustainability into the core business.

Be that as it may, businesses like Stora Enso cannot solve the global challenges alone. Collaboration and transparent sustainability commitments are required from everybody. Each sustainably conscious business should ask themselves: how can we create the most meaningful and most significant positive contributions in the critical areas of society and the planet?

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## APPENDIX I. The Business Sustainability Typology Grid

<b>The Business Sustainability Typology Grid</b>				
<b>Criteria</b>	<b>Bus-as-usual</b>	<b>B.S. 1.0</b>	<b>B.S. 2.0</b>	<b>B.S. 3.0</b>
Value creation	Shareholder value maximization	Improved shareholder value	Triple value beyond shareholder value, including social and environmental values	Creating significant positive impact in critical areas of societal/planetary concern
Primary corporate attitude		A pattern of reacting to societal pressures	A pattern of active exchange with broad stakeholders	A pattern of voluntary, proactive and most likely interactive collaboration with new players
Primary focus		Shareholder	Stakeholder	Society & planet
Strategy	Managing risks ensuring compliance	Managing primarily risks while starting to embrace first opportunities of new environmental and social developments	Triple bottom value is created not just as a side-effect of business activities, but as the result of deliberately defined goals and programs addressed at specific sustainability issues or stakeholders	Societal concerns replace the traditional customer and trigger an "outside-in" view on the company's capabilities and resources which are employed to provide significant positive societal & planetary value while ensuring the long-term well-being of the company
Market definition and positioning		Mostly reactive to challenges from outside of traditional market influences	Exploration of new opportunities outside existing markets	Defining business activities outside existing markets
Product & services		Probably no changes (beyond cosmetics)	Most likely adaptation of products/services (but not questioning their societal value)	Creation of new products and services as a voluntary & proactive response to societal/environmental problems, likely in collaboration with new partners
Governance & leadership		Probably not yet affected	- Cross-functional sustainability committee - Compensation of (top) management includes triple bottom line value creation	- Relevant societal representatives are fully integrated in the relevant decision-making processes at all levels of the organization
Type of CEO (based on Pless et al, 2013)	Traditional economist	Opportunity seeker	Integrator	Idealist
Type of companies (based on Pless et al, 2013)	Most companies, including again BP (moving from BS 1.0)	P&G, Nestlé, Danone, General Electrics and Walmart (moving in from Bus-as-usual)	Wholefood, Patagonia, Timberland, Novo Nordisk, Bodyshop, Unilever, and also Interface (moved in directly from business-as-usual)	A largely empty space, used to house Grameen Bank which has shifted back to BS 2.0 since its start in 3.0
Sustainability implementation		Most likely centralized	Most likely to become integrated into line functions	The company re-organizes around the societal issues they address and include other players into such new open & dynamic structures
Processes		Primary focus, particularly around expanded value chain	An secondary focus reflecting the strategic changes	Becomes a service-function key to deliver the value

<b>Criteria</b>	<b>Bus-as-usual</b>	<b>B.S. 1.0</b>	<b>B.S. 2.0</b>	<b>B.S. 3.0</b>
Reporting		Little beyond what is required, tendency on good news (risk: green washing)	- Internal reporting includes triple bottom line - External reporting on sustainability	- Reporting reflects the societal value created and includes voices of beneficiaries
Stakeholder influences		Mostly external process-focused interventions from non-market players (media, government/regulations, NGOs and communities)	Internal stakeholders (employees) as well as suppliers, customers as well as (new) external partners/cooperation	Company takes a pro-active approach in identifying and engaging concerned stakeholders

## APPENDIX II. The Net Positive 12 Principles

- The organization aims to make a positive impact in its key material areas.
- The positive impact is clearly demonstrable if not measurable.
- As well as aiming to have a positive impact in its key material areas, the organization also shows best practice in corporate responsibility and sustainability across the spectrum of social, environmental and economic impact areas, in line with globally accepted standards.
- The organization invests in innovation in products and services, enters new markets, works across the value chain, and in some cases, challenges the very business model it relies on.
- A Net Positive impact often requires a big shift in approach and outcomes, and cannot be achieved by business-as-usual.
- Reporting on progress is transparent, consistent, authentic and independently verified where possible. Boundaries and scope are clearly defined and take account of both positive and negative impacts. Any trade-offs are explained.
- Net Positive is delivered in a robust way and no aspect of a Net Positive approach compensates for unacceptable or irreplaceable natural losses, or ill treatment of individuals and communities.
- Organizations enter into wider partnerships and networks to create bigger positive impacts.
- Every opportunity is used to deliver positive impacts across value chains, sectors, systems, and throughout to the natural world and society.
- Organizations publicly engage in influencing policy for positive change.
- Where key material areas are ecological, robust environmentally restorative and socially inclusive methods are applied.
- An inclusive approach is adopted at every opportunity, ensuring affected communities are involved in the process of creating positive social and/or environmental impacts.

APPENDIX III. The Net Positive Maturity Matrix

Principle Material	Element	Question	Level 1	Level 2	Level 3	Level 4
Systemic	<b>Issue Area: Prioritize Impact and Potential</b> <i>Note: This is the only element where a company could be "net positive" without achieving Level 4 by specifying the subject of their NP claim, such as, "Net positive on carbon."</i>	What issue and opportunity areas are being addressed?	Addresses: most material area. Any negative impacts created by this approach on another material area are also addressed.	Addresses the two most material areas. Any negative impacts resulting from either issue strategy on another material area are also addressed.	Addresses three most material areas. Any negative impacts resulting from strategy on another material area are also addressed.	Addresses all material areas. Net positive strategies focus on all material areas – an organization's greatest impacts on society and the environment as well as its largest areas of unique future potential. A positive impact in one material issue cannot compensate for the negative impact or "footprint" in another material area.
	<b>Include Partners/Stakeholders</b>	How does the organization integrate external/independent stakeholder views?	Identifies material areas via indirect stakeholder perspectives (e.g. through desk research)	Identifies material areas through a stakeholder "expert" advisory panel. Feedback integrated into Net Positive strategy and implementation	Identifies material areas through direct engagement with stakeholders that both impact the organization, and are impacted by the organization, across global operations. Feedback integrated into Net Positive strategy and implementation.	Identifies material areas through direct engagement as in Level 3, however, aspects of the strategy and operational plan are co-created in partnership with key stakeholders.
	<b>Integrate Strategy</b>	To what extent does the organization's net positive efforts address its core business?	Focuses on the strategy of one key business unit or part of the organization. Ownership of strategy is that one team or the Sustainability Team.	Focuses on the strategy of two or more key business units or parts of the organization. Ownership of strategy includes with those key business/organizational teams.	Addresses net positive organization-wide and organizational/executive governance. CEO owns the strategy.	Transforms existing business model, from raw materials to innovation to operations to stakeholder relations / public policy to customer marketing, etc. Every head of department is accountable for a piece of the strategy. It is reviewed alongside commercial targets at the Board level.
	<b>Unit of Focus: Recognize Interdependence</b>	What units of the value chain / organization are being addressed?	Address footprints and handprints of a single product/service/asset/building	Address footprints and handprints of the entire organization (e.g. business unit/line)	Address footprints and handprints of the entire organization	Address footprints and handprints of the entire organization plus other actors, such as the organization's sector, geographic region, etc.
	<b>Collaborate Widely</b>	How does the organization collaborate with others to create net positive impacts?	Seeks information from value chain partners that are directly relevant to the company's net positive efforts, e.g. suppliers of products being evaluated.	Collaborates with value chain partners to jointly pursue net positive-relevant outcomes.	Collaborates with partners to define and advance value chain-wide approaches to net positive	Broadly collaborates to effect net positive system-wide change through large scale collaboration aimed at defining and pursuing net positive outcomes
<b>Regenerative</b>	<b>Scope of System: Create and Enabling Context</b>	To what extent does the organization address upstream/downstream impacts?	Addresses direct impacts	Addresses cradle to gate impacts	Addresses cradle to gate impacts	Addresses all the systems that the organization influences through activities including and beyond operations - e.g. lobbying, public affairs, etc. The systems being addressed are those raised in the materiality assessment.
Transparent	<b>Innovation: Encourage Experimentation</b>	How does the organization innovate to enhance its positive impacts?	Raises awareness of net positive concept as aspiration for sustainable innovation	Integrates net positive ambition and analysis into R&D and go-to-market	Pilots and launches innovative offerings based on net positive ambition and analysis	Makes fundamental changes to core offering(s) and innovates new approaches to achieve net positive impacts
	<b>Scale of Aspiration: Ground Evidence in Science</b>	What does the company aspire to in how its handprint/contribution compare to its footprint?	Aspires to make and account for positive handprint impacts	Aspires to make and account for organizational handprint that is larger than direct operational footprint.	Aspires to make and account for organizational handprint that is larger than cradle to gate footprint	Aspires to make and account for organizational handprint that is larger than cradle to grave footprint, including any and all additional organizational impacts
	<b>Context of Impact: Create Long-Term, Positive Impact</b>	How does the organization demonstrate / measure impact over the long term?	Seeks impacts based on relative measures, e.g. a ratio of contribution to footprint	Seeks net positive impacts with defined absolute impacts, e.g. net positive and achieving "x" impact	Seeks impacts with absolute measures in the context of contributions to global sustainability efforts (e.g. SDGs, Paris Targets), e.g. net positive and achieving "x" progress against a sector-wide 2 degree pathway	Creates impacts with absolute measures in the context of contributions to global sustainability efforts (e.g. SDGs, Paris Targets), with long-term impacts that exist on their own without continued organizational intervention.
	<b>Commitment and Transparency: Embrace Open Communication</b>	How does the organization describe its net positive commitments and progress?	Communicates generally on its aspirations and efforts for net positive	Publicly commits to achieve NP ambition in alignment with principles	Reports publicly on its commitment, as well as methodology, metrics, goals, and progress towards that commitment, along with lessons learned	Establishes a time-bound commitment and reports publicly on methodology, metrics, goals, and progress towards that commitment, along with lessons learned. Organization secures verification by an external stakeholder/assurer.
	<b>Independent Verification: Ensure True and Balanced Reporting</b>	How does the organization verify its net positive approach, methodology, and/or data?	Does not independently verify any aspects of a net positive strategy	Verifies at least one issue area, through internal auditors	Verifies at least one issue area with independent auditors	Verifies all aspects of a net positive effort with independent auditors
	<b>Negative Impacts: Demonstrate Progress and Absolute Impact</b>	How does the organization handle negative impacts created by elements of their net positive strategy?	Does not describe potential negative impacts stemming from efforts of positive impacts (e.g. rebound effects, secondary and tertiary effects)	Qualitatively describes potential negative impacts to reduce those impacts	Qualitatively describes potential negative impacts and quantitatively accounts for most material negative impacts, with a defined strategy and set of actions to reduce those impacts	Comprehensively and quantitatively describes a full range of potential negative impacts, with a defined strategy and action plan to reduce those impacts in service of a net positive impact

#### APPENDIX IV. The Internal Survey

Do you see Consumer Board Sustainability, n = 21

- a) Improved shareholder value  
Triple value beyond shareholder value, including social and environmental
- b) values  
Creating significant positive impact in critical areas of societal/ planetary
- c) concerns (such as food safety)

Is Stora Enso's corporate attitude

- a) A pattern of reacting to societal pressures
- b) A pattern of active exchange with board stakeholders  
A pattern of voluntary, proactive and most likely interactive collaboration with
- c) new players

Stora Enso's primary focus lies on

- a) Shareholders
- b) Stakeholders
- c) Society & Planet

Which choice best describes the SE CB Strategy, n = 21

- a) Managing primarily risks while starting to embrace first opportunities of new environmental and social developments  
Triple bottom value is created not just as a sideeffect of business activities, but as the result of deliberately defined goals and programs addressed at specific
- b) sustainability issues or stakeholders  
Societal concerns replace the traditional customer and capabilities are employed to provide positive societal & planetary value while ensuring the long-term
- c) wellbeing of the company

How would you define the markets and SE positioning

- a) Mostly reactive to challenges from outside of traditional market influences
- b) Exploration of new opportunities outside existing markets

- c) Defining business activities outside existing markets

#### Is SE CB leadership & governance

Cross-functional sustainability committee where triple bottom line (social,

- a) environmental and economic) value creation is considered

Relevant societal representatives are fully integrated in the relevant decision-

- b) making processes at all levels of the organization
- c) neither of above

#### Is Sustainability implementation in CB

- a) Centralized
- b) Integrated into line functions

The company re-organizes around the societal issues they address and include

- c) other players into such new open & dynamic structures

#### How do the stakeholders influence SE CB, n = 21

Mostly external process-focused interventions from non-market players (media,

- a) government/regulations, NGOs and communities)

Internal stakeholders (employees) as well as suppliers, customers as well as

- b) (new) external partners/cooperation

Company takes a pro-active approach in identifying and engaging concerned

- c) stakeholders

#### How does the organization integrate external/independent stakeholder views, n = 21

Identifies material areas via indirect stakeholder perspectives (e.g. through desk

- a) research)

Identifies material areas through a stakeholder 'expert' advisory panel. Feedback

- b) integrated into Sustainability Strategy and implementation

Direct engagement with stakeholders that both impact the organization, and are impacted by the organization. Feedback integrated into Sustainability Strategy

- c) and implementation

- Identifies material areas through direct engagement as in option c), however, aspects of the strategy and operational plan are co-created in partnership with
- d) key stakeholders.

To what extent does the organization's Sustainability efforts address its core business?

- Focuses on the strategy of one key business unit or part of the organization.
- a) Ownership of strategy is that one team or the Sustainability Team.
- Focuses on the strategy of two or more key business units or parts of the organization. Ownership of strategy includes with those key
- b) business/organizational teams.
- Addresses net positive organization-wide and integrates net positive into core
- c) organizational/executive governance. CEO owns the strategy.
- Transforms existing business model (from raw materials to innovation to operations to stakeholder relations / public policy to customer marketing, etc.).
- d) Every head of department is accountable for a piece of the strategy.

How does the organization collaborate with others to create positive sustainability impacts?

- Seeks information from value chain partners that are directly relevant to the
- a) company's sustainability efforts, e.g. suppliers of products being evaluated.
- Collaborates with value chain partners to jointly pursue sustainability-relevant
- b) outcomes.
- Collaborates with partners to define and advance value chain-wide approaches
- c) to sustainability
- Broadly collaborates to effect sustainability system-wide change through large
- d) scale collaboration aimed at defining and pursuing positive outcomes

How does the organization demonstrate / measure impact over the long term?

- Seeks impacts based on relative measures, e.g. "a ratio of contribution to
- a) footprint"
- Seeks net positive impacts with defined absolute impacts, e.g. "net positive and
- b) achieving "X" impact"

Seeks impacts with absolute measures in the context of contributions to global sustainability efforts (e.g. SDGs, Paris Targets), e.g. "net positive and achieving

c) "X" progress against a sector-wide 2 degree pathway"

Creates impacts with absolute measures in the context of contributions to global sustainability efforts (e.g. SDGs, Paris Targets), with long-term impacts that

d) exist on their own without continued organizational intervention.

How does the organization describe its sustainability commitments and progress?, n =21

a) Communicates generally on its aspirations and efforts for sustainability

Publicly commits to achieve Sustainability ambitions in alignment with reported

b) principles

Reports publicly on its commitment, as well as methodology, metrics, goals, and

c) progress towards that commitment, along with lessons learned

Establishes a time-bound commitment and reports publicly on methodology, metrics, goals, and progress towards that commitment, along with lessons

d) learned. Organization secures verification by an external stakeholder/assurer.

How does the organization handle negative impacts created by elements of their Sustainability strategy?

Does not describe potential negative impacts stemming from efforts of positive

a) impacts (e.g. rebound effects, secondary and tertiary effects)

Qualitatively describes potential negative impacts, including a strategy to reduce

b) those impacts

Qualitatively describes potential negative impacts and quantitatively accounts for most material negative impacts, with a defined strategy and set of actions to

c) reduce those impacts

Comprehensively and quantitatively describes a full range of potential negative impacts, with a defined strategy and action plan to reduce those impacts in

d) service of a net positive impact

Open Word

What does business sustainability mean in the context of the coming decades?

What do real life examples of sustainable companies look like?

How do we rate organizations in the process of transforming to sustainable companies? By what criteria is a company considered sustainable?

What are the transformational challenges of becoming sustainable company?

## APPENDIX V. The Stora Enso's Sustainability Policy



April 2017

## Stora Enso's Sustainability Policy

As a global renewable materials company we provide products and services that benefit customers, other stakeholders and the environment, and we seek to mitigate adverse effects from our operations and our supply chain.

### Purpose, values and approach

Our purpose "Do Good for the People and the Planet" and our values "Lead" and "Do What's Right" commit us to doing business responsibly. Our Sustainability Agenda is based on the Triple Bottom Line model, balancing social, environmental and economic objectives as informed by input from our key stakeholders.

### Objectives

- As a minimum we comply with all applicable legal and regulatory obligations in the countries where we operate.
- We continuously improve our sustainability management processes and performance.
- We engage with our stakeholders to ensure that our sustainability approach and communication remain material.
- We publish our tax footprint annually to demonstrate financial transparency.
- We respect human rights as outlined in the Stora Enso's Statement on Human Rights and consider them in each aspect of our approach to sustainability.

### Social Agenda

- **We care about all our people**; our priority is to provide a safe workplace for employees and contractors, and our Health and Safety Policy guides our actions.
- **We help communities to be resilient**; our Sponsorships and Donations Policy guides our corporate community investments.
- **We play fair**; our Code of Conduct and our Business Practice Policy provide an ethical compass for our daily business activities.

### Environmental Agenda

- **We use natural resources with care** through optimised use, re-use and recycling of water and materials. We ensure environmentally responsible treatment and disposal of waste.
- **We combat global warming**; our Energy and Carbon Policy details our approach.
- **We respect the local environment** where we operate. We are committed to sustainable forestry as described in our Wood and Fibre Sourcing, and Land Management Policy.

### Economic Agenda

- **We help customers be sustainable**; through our renewable and recyclable products and our services we contribute to a low-carbon and resource efficient society.
- **We choose like-minded partners** guided by our Supplier Code of Conduct.
- **We reward investors sustainably** according to our Dividend Policy.

Our ambition is to ensure a positive Total Contribution to Society (TCS) by balancing financial success with social and environmental responsibility over the long-term.

Karl-Henrik Sundström  
CEO

THE RENEWABLE MATERIALS COMPANY

APPENDIX VI. Stora Enso Group-level Key Performance Indicators



# Sustainability Performance

## Monthly KPI update – November and Q3 2017 (1/3)

Focus Area	KPI	Target 2017 / LT target	Reporting Frequency	2015	2016	Q3 2016	Q3 2017 (Q2 2017)	Oct (Sept)	Status vs target / Change / Comment
Human Rights	Implementation of preventive and remediation actions, % of all actions	To complete remaining HRAP actions by the end of 2017.	Monthly						
	LTA rate, own employees (lost time accidents per 1m working hours)	4.0 milestone by the end of 2017	Monthly						
	Leadership Index (YourVoice employee survey)	80 by the end of 2018	Annual						
2. Community	Total Community Investment year-to-date as EUR, including cash, employee work time and in-kind	No Group level target defined.	Biannual (half-year /full year)						
	Code of Conduct Index (YourVoice employee survey)	Positive trend	Annual						
3. Business ethics									

Social agenda



# Sustainability Performance

## Monthly KPI update – November and Q3 2017 (2/3)

Focus Area	KPI	Target 2017 / LT target	Reporting Frequency	2015	2016	Q3 2016	Q3 2017 (Q2 2017)	Oct (Sept)	Status vs target / Change year-on-year / Comment
Environmental agenda	Environmental non-compliance events	Zero non-compliance events	Quarterly						
	# of significant non-compliance events	No Group level target	Quarterly						
	# of near or minor non-compliance events	Increasing trend	Annual						
	Materials: Process residuals utilization rate (%)	Decreasing trend	Quarterly						
4. Materials, Water & Energy	Water: Process water discharge per saleable tonne of pulp, paper and board (m3/t)	Decreasing trend	Quarterly						
	Water: Total water withdrawal (m3) per saleable tonne of pulp, paper and board (m3/t)	Decreasing trend	Quarterly						
	Energy: Specific Energy Consumption (electricity and heat) per saleable tonne of pulp, paper and board (kWh/t)	15% below 2010 level by end 2020. A linear annual target for 2017 is -10,5% vs. 2010 baseline year.	Quarterly						



# Sustainability Performance

## Monthly KPI update – November and Q3 2017 (3/3)

Focus Area	KPI	Target 2017 / LT target	Reporting Frequency	2015	2016	Q3 2016	Q3 2017 (Q2 2017)	Nov (Oct)	Status vs target / Change / Comment
Environmental agenda	5. Carbon dioxide Fossil CO2 emissions (scope 1+2) per saleable tonne of pulp, paper and board (kg/t) [Without Beihai]	Decreasing trend towards 2025 target (35% below 2006 benchmark level)	Quarterly						
	6. Forests, plantations & Land Use Fossil CO2 per total energy consumed (scope 1+2 kg CO2 / MWh) [Without Beihai] % of the lands owned and managed by the company covered by forest certification schemes.	Will be reviewed by the end of 2017 96% of lands certified by end of 2017	Biannual (half-year /full year) Annual						
7. Customers	Net Promoter Score (NPS), % Promoters - % Detractors, rolling 12 months	No Group level target defined.	Monthly						
Economic agenda	8. Sourcing % of supplier spend covered by Supplier Code of Conduct (SCoC)	95% of the Group's supplier spend covered with the SCoC by the end of 2017.	Monthly						
	9. Investors Stora Enso's (SE) rolling 12 months Total Shareholder Return (TSR) % against Benchmark Group (BG). TSR includes share price development and dividends paid.	Higher than the Benchmark Group	Monthly						



## APPENDIX VIII. The Suggested Net Positive Key Performance Indicators

	<u>Focus Area</u>	<u>KPI</u>	<u>Target 2018</u>	<u>Reporting Frequency</u>	<u>Level</u>	<u>SDG addressed</u>
1	Employees and wider workforce	New employment created	hired personnel / a	a	CB Division	8
1	Employees and wider workforce	Promotion of gender equality	Women in managerial positions / managerial positions	a	CB Division / Group	5, 10
2	Community	Stakeholders benefiting from established and on-going projects in nearby communities of mills	well-being indicator to be defined	a	CB Division / Group	1, 2, 4, 7 depending on the nature of commitments
3	Business ethics	Suppliers and Contractors implementing SE CB CoC	number complying / number of suppliers or contractors	6 months / a	CB Division	
4	Materials, Water & Energy	Paperboard substituting PET products (assuming products or ton of paper directly substituting PET bottles for instance)	tons or pcs substituted	Quartal/ 6 months / a	CB Division	12, 13
4	Materials, Water & Energy	Paperboard substituting PET products (assuming products or ton of paper directly substituting PET bottles for instance)	plastics avoided / ton of product	Quartal/ 6 months / a	CB Division	12, 13
4	Materials, Water & Energy	Re-utilization rate of side streams (incl. Heat, ash, bark water etc.)	re-utilization percentage	Quartal/ 6 months / a	CB Division	12, 13
4	Materials, Water & Energy	Use of customer side streams to board and biocomposites	tons / a	a	CB Division	12, 13, 15, 17
4	Materials, Water & Energy	Share of bio-based energy sources in the operations	development percentage against the reference year	a	CB Division / Group	7, 13
5	Carbon dioxide	Greenhouse gas emissions avoided by current processes (how much emissions have been before current technology compared to the reference year)	per sackable tonne of pulp, paper and board (kg/t)	Quartal/ 6 months / a	CB Division	13
8	Sourcing	Number of raw material suppliers in compliance of Forest Certification Council	percentage of suppliers	6 months / a	CB Division	17
9	Investors	Tax footprint of CB/SE	€ brought to the society	a	CB Division / Group	8
9	Investors	SROI	TCS meter to operationalize sustainability	a	CB Division / Group	8