

# **CORPORATE SOCIAL RESPONSIBILITY: CLIMATE-NEUTRAL EUROPEAN UNION BY 2050**

## Abstract

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Abstract <p>The purpose of the research is to analyze the role of Corporate Social Responsibility in the European Union's climate-neutral by 2050 vision. The study is focused on the environmental responsibility of businesses. Companies' environmental performance and sustainable-related development plans are reviewed to determine whether they are in line with the vision.</p> <p>The theoretical section of the thesis will cover three main subjects. Firstly, the structure of the European economy is covered. This is followed by the introduction of climate change. The Paris Agreement and a report provided by the Intergovernmental Panel on Climate Change are covered as the basis for the EU's vision. Finally, the three aspects of corporate social responsibility, i.e. economic, social and environmental, are introduced.</p> <p>In the empirical part of the thesis, a mixture of qualitative and quantitative methods were utilized. The data was gathered comprehensively from secondary sources such as the EU's publications and corporate social reports of research companies. The discussion of the results compares the companies' data to the theoretical framework and strategies presented in the EU's vision.</p> <p>Valuable information regarding the environmental impact of large enterprises was gained. The study results indicate that companies have a significant responsibility for the EU's vision and its possible achievement. The research companies were able to communicate environmental issues transparently and had plans towards a low carbon future. The study findings provide a comprehensive basis for a more profound study regarding sustainable development of the European Union and its companies.</p>		
Keywords Corporate Social Responsibility, Climate Change, Emissions, Climate-Neutrality, European Union		

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# 1 INTRODUCTION

## 1.1 Research Background

Climate change has been a concern for Europeans for multiple years. We have experienced 18 of the warmest years on the record in the last two decades. Global warming has been seen in the form of extreme weather conditions such as heatwaves and over five degrees higher temperatures in the Arctic Circle than usual. Severe droughts have been witnessed in large parts of Europe, and in contrast to that, especially Central and Eastern Europe have been suffering from significant floods. In 2017 Ophelia, the first strong East Atlantic hurricane reached Ireland, and in the following year storm Leslie caused destruction to Portugal and Spain. (European Commission 2018.)

Needless to say, climate change has severe effects on our environment and safety. The massive use of fossil fuels and continuously growing consumption has led to a situation where drastic changes that impact large parts of the society and economy are required. With this in mind, the European Union (EU) published its vision on climate-neutral European Union by 2050: "A European vision for a modern, competitive, prosperous and climate neutral economy." With this initiative, the EU aims to limit the global temperature increase to 1.5°C degrees and to be the first major climate-neutral economy by 2050. (European Commission 2018.) Climate or carbon neutrality refers to a state where the emitted and absorbed carbons are in balance. Achieving net-zero emissions requires emission offsetting with carbon sinks to all greenhouse gas emissions. (European Parliament 2020.) EU and its 27 member countries (European Union 2020a) are a major force driving sustainable development. A question can be raised regarding the parties sharing responsibility in the initiative: EU, member countries' governments, companies, each individual, or all of the above?

Considering the responsibility of companies, the term corporate social responsibility (CSR) is often raised. In the concept of CSR, the responsibility is divided towards three parts: people, planet, and profit. The three P's, often referred to as social, environmental, and economic responsibility, have become increasingly important for companies. (Dans 2018.) Businesses have acquired a large amount of power, both economic and political, and therefore are capable of making an impact on the climate crisis (Bommier & Renouad 2019). However, changing the course of business is not simple. Many companies work in large business networks, and major changes in operations require a vast amount of resources. In addition to that, changes usually take time. In this situation, the time is extremely limited, and the pressure from stakeholders can be massive. It is worrisome that

the majority of the European companies do not have targets for reducing their greenhouse gas emissions (Neslen 2019). This raises questions regarding corporate social responsibility in climate-neutral EU by 2050 vision and whether the goal can be achieved without companies' voluntary participation.

The research topic was chosen based on its importance to society, economy, and environment. The climate-neutral EU vision is relatively new, and the responsibility of businesses has not been researched widely. Besides that, the topic is a major interest of the author and will support the author's professional development.

## 1.2 Research Objectives and Limitations

### **Research Objectives**

Research objectives are formulated to show the purpose of the research and point a direction. The objectives support the research questions and give more specific details about the study. (Saunders, Lewis & Thornhill 2009, 34.)

The main objective of the research is to assess the corporate social responsibility in the EU's vision of a climate-neutral economy by 2050. To support the main objective, the research studies large European companies' sustainable-related development plans and their current impact on the climate crisis. Royal Dutch Shell, DHL, Vattenfall, Unilever, and Stora Enso are covered as examples of large European enterprises. Companies from oil, logistics, energy, fast-moving consumer goods, and forestry industries are chosen to gain a broad perception of corporate environmental practices between different sectors. Companies' initiatives towards the climate-neutrality will be examined to understand which tools and methods companies are using. The companies' approaches will be compared to the suggestions published by several parties, including non-governmental organizations. The approaches will also be compared with the strategies the EU published in its vision. The study aims to research how responsibility is divided between the EU, national governments, businesses, and individual consumers. Furthermore, the study seeks to understand how much European companies are able to affect the achievement of the vision. The outcome of the research will demonstrate whether the companies are lacking behind the vision set by policy-makers.

By determining these factors, the thesis can be used as a tool to educate students, employees, and companies about the importance of sustainable development and corporate responsibility. Especially current students and young adults will be entering a business life, which is in a transition phase. It is essential to be educated about the issues driving the significant and rapid change as these young adults will be tomorrow's decision-

makers. Overall, the research will provide valuable insight about the vision that will impact many of the European companies.

### **Research Limitations**

Price and Murnan (2004) define the research limitations as the factors that impact the interpretation of the findings of specific research. Limitations can be constraints regarding the generalizability, application in practice, or the overall utility of the findings. The constraints can occur due to the design of the study, methods used, or any other challenges that affect the validity of the study. (USC Libraries 2020.)

The concepts of CSR and sustainable development have been widely researched. The specific research topic of the climate-neutral EU by 2050 was published at the end of 2018 and is therefore relatively new. This brings some limitations to the amount of data available regarding the subject. Companies publish annual reports once a year, and the last reports available are concerning the year 2019. Companies may not have had the time to acknowledge and react to the EU's vision in their annual and corporate social reports of 2019. Thus, there may be a lack of information regarding businesses' approaches regarding the vision.

The research will focus on large companies operating in the EU with more than 250 employees. Large enterprises are obligated to disclose their implemented policies regarding environmental protection, social responsibility, respect for human rights, anti-corruption, and diversity on company boards (European Commission 2020a). Therefore, large companies also publish data regarding their environmental performance, which can be used as a base for the analysis. Large companies also have more resources to fight climate change, making them a valuable subject for the research. This limitation leaves many small and medium-sized companies out, and therefore the research result does not tell the whole truth. Though the companies researched are from different industries and countries, the sample size is limited and leaves out multiple variables that could affect the research result.

As mentioned, CSR consists of three aspects, which are an environmental, economic, and social responsibility. As the EU has focused its vision on climate-neutrality, the environmental side of CSR will be the main research topic. The other parts will be covered briefly in theory, yet the analysis and research of the companies will be made based on their environmental performance and plans.

### 1.3 Research Methodology and Questions

#### **Research Methodology**

The research can be designed based on two different approaches. These are deductive and inductive approaches. The deductive research approach is more commonly used in scientific research, and it starts with the formation of a theory and a hypothesis. Afterward, the hypothesis is tested, and based on that, the study results are formed and generalized. Quantitative methods are often used in the deductive approach. The alternative approach, the inductive, is the opposite of the deductive approach. Whereas the deductive approach starts with the hypothesis, the inductive approach begins with the collection of data. Based on the data that is gathered, an analysis is made, and the theory is formed. The inductive approach usually uses qualitative methods in data collection. The research approaches can also be mixed in order to gain benefits from both approaches. (Saunders et al. 2009, 124-127.)

The quantitative methods which the deductive approach commonly uses can include surveys, laboratory experiments, and other numerical methods such as mathematical modeling. Hence, the base of quantitative methods are numbers, which are often analyzed using statistical tools. Qualitative methods, on the other hand, include observations, interviews, case studies, fieldwork, documents, and the researcher's own impressions and reactions. As the method bases its research heavily on what has been said about a specific topic, it is an excellent tool for studying social and cultural phenomena. (Myers 2009, 8.)

This research focuses on understanding the phenomenon that the EU's vision has created among companies. The study aims to measure and analyze the responsibility of businesses in the fight against climate change. For the purposes of this research, an inductive approach is applied. The theoretical framework is formed firstly. This is followed by empirical research, and afterward, conclusions are drawn. The research uses both qualitative and quantitative methods. Qualitative methods are used in the form of previous studies. Observations will be made regarding the relationship between businesses and climate change. Also, the relationship between European companies and the EU's vision will be examined. Quantitative methods are used to analyze statistics and environmental performance data. Based on the secondary data from various sources, the author will make interpretations.

The data that is used for the research can be either primary or secondary. Primary data refers to new data that is collected by the researcher. Secondary data, on the other hand,

refers to information from secondary sources such as previous studies, books, statistics, and surveys. (Stokes 2011, 32.)

The research topic of the study is broad and covers multiple countries and industries, therefore secondary data is used comprehensively to conduct the research. The data from secondary sources include publications and studies conducted by the European Union and non-governmental organizations. In addition to that, corporate social responsibility and annual reports, and other relevant literature will be utilized. Quantitative data will also be used in the form of statistics and financial and environmental performance figures of the companies.

### **Research Questions**

At the beginning of the research process, it is crucial to define a clear research question. The research question sets a direction for the study, and the success of the research can be evaluated based on whether the researcher was able to draw conclusions and answer the research question based on the data collected. (Saunders et al. 2009, 32.)

Due to the purpose and objectives of the research, the following research question was formed:

What is the role of Corporate Social Responsibility in the climate-neutral European Union by 2050 vision?

Sub-questions are formed to support the main research question and provide more value to the research. The following sub-questions were formed:

1. What is the current environmental impact of the companies operating in the EU?
2. Have companies already acknowledged the vision of a climate-neutral EU?
3. What kind of approaches and tools are companies using towards achieving the climate-neutrality by 2050?
4. Is it possible to achieve the climate-neutrality goal without companies' voluntary participation?

### **1.4 Thesis Structure**

The thesis consists of seven main parts. The parts are an introduction, theoretical framework, empirical research and data analysis, conclusions, summary, and references. The structure of the thesis is presented in the Figure 1.

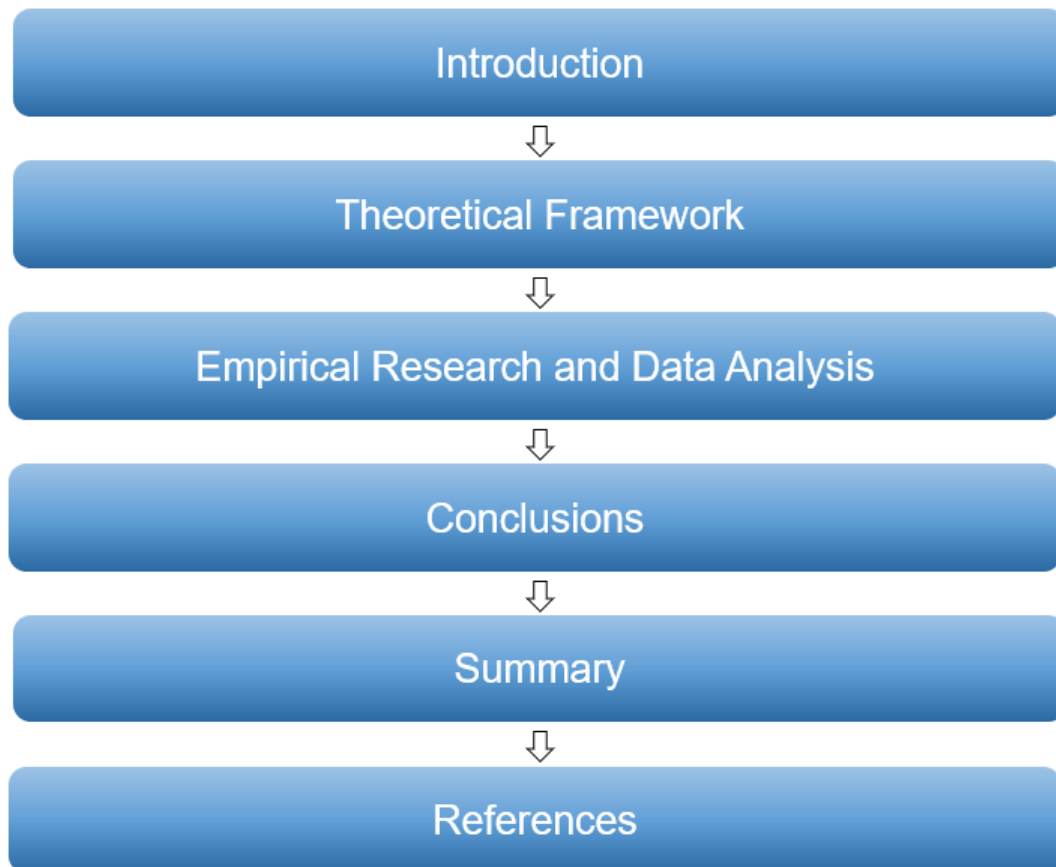


Figure 1 Thesis structure

The thesis starts with an introduction. It covers the research background, objectives and limitations, methodology and research questions, and the structure.

The theoretical framework consists of three chapters. Firstly, an overview of the European economy is presented. Secondly, climate change and its background are covered. Finally, the theory section focuses on corporate social responsibility.

The empirical part of the thesis includes data acquisition and the introduction of the data. The data covers climate-neutral EU vision and five European companies. This is followed by a discussion of the results.

The conclusion part includes answers to the research questions. The part also analyzes the validity and reliability of the research. Suggestions for further research are also covered.

The final chapter of the thesis is a summary. The chapter is followed by a list of references.

## 2 EUROPEAN ECONOMY

The European Union was formed after the Second World War. The Netherlands, Luxembourg, Belgium, France, Germany, and Italy were the six founding countries for the soon-to-be economic union. The union gained new members, and the single market was built in 1993. The basis of the market was four freedoms: the movement of goods, people, services, and money. At the turn of the millennium, “euro” the currency for Europeans, was adopted by many countries, increasing the integration. The over half-century-long journey created a strong political and economic union in the Europe. (European Union 2020b.)

Nowadays, the EU acts as an open market for its 27 member countries. The market has major world trading power as the third largest economy in global international trade after the United States and China. (European Union 2020a.) EU aims to make the business and industries competitive while supporting sustainable development. The union has created business and industrial policy to improve the overall business environment, create jobs, and to enhance the climate of entrepreneurship. Also, the aim is to help small businesses with better access to finance and markets. (European Commission 2020b.) The trade in the EU accounts for 15.6% of the global imports and exports. Over 64% of the EU countries' business is done within the union. (European Union 2020a.) In 2019, the gross domestic product (GDP) of the EU was around 13,900 billion euros at current prices (Eurostat 2020a). GDP refers to the total value of everything produced in a country or market area (Amadeo 2020).

In 2017, there were 22.2 million non-financial enterprises in the EU (Eurostat 2020b). Small and medium-sized companies (SMEs) represent 99% of companies' total number within the EU (European Commission 2019). A company is defined as medium-sized when its staff is under 250 persons and turnover under 50 million euros. A company with fewer employees than 50 and turnover under 10 million euros is considered as small-sized. Micro companies have less than ten employees and have a turnover of two million euros or less. (European Commission 2020b.) European Union classifies large enterprises as companies with 250 or more employees (Eurostat 2020c). Figure 2 illustrates the division between small, medium, and large-sized enterprises regarding the number of companies in the EU, the share of total employment, and the amount of total value added.

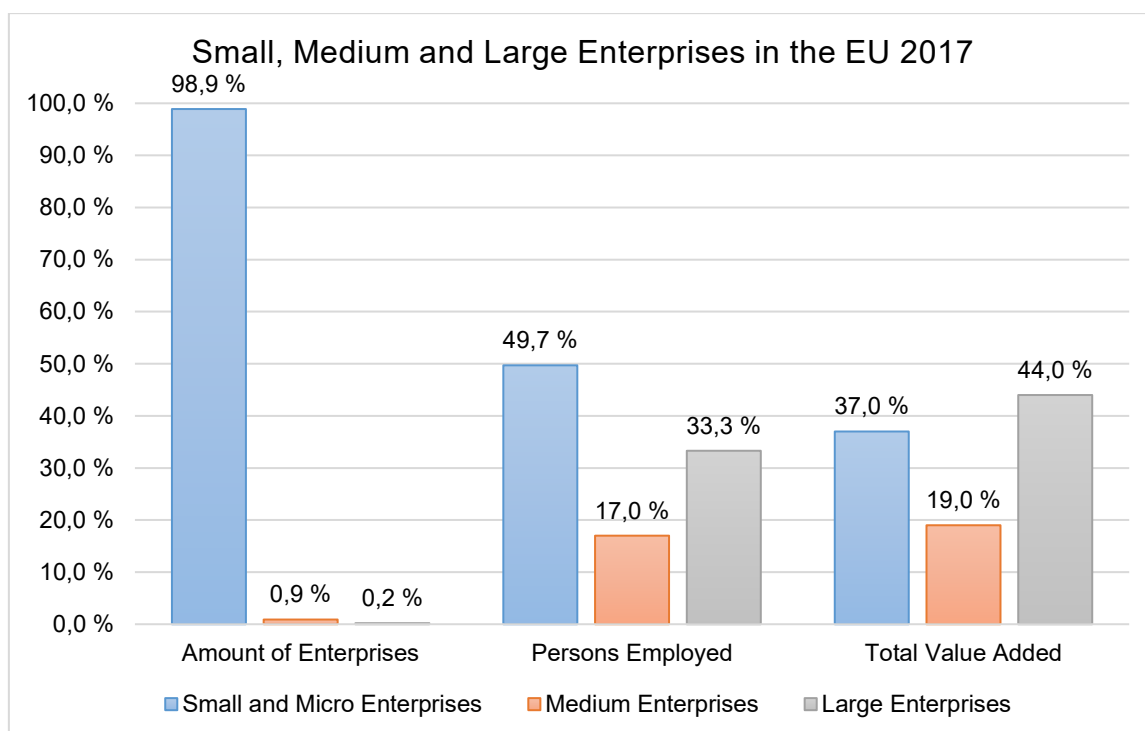


Figure 2 Small, Medium and Large-sized Companies in the EU 2017 (Eurostat 2020d)

In 2017, small and micro enterprises accounted for almost up to 99% of the EU companies. The number of medium enterprises was 0.9% of the total, and large enterprises accounted only for 0.2%. (Eurostat 2020d.) Within the union, Germany has the largest number of large enterprises (4,497) following by Poland (1,694) and France (1,385) (Clark 2019). Despite the small number of large enterprises in the EU, they employ the third of the total employment. In contrast to that, the small and micro enterprises employ 49.7%, and the medium-sized employ 17% of the total. Regarding the total value added, large enterprises take the largest part, with 44%. The small and micro companies account for up to 37% of the total value added, while medium enterprises create 19%. (Eurostat 2020d.)

The industrial structure of the EU's economy is heavily based on services. The service industries account for 73% of the total value added, and the sector provides three jobs out of four (Eurostat 2020b). Figure 3 shows the ten main economic activities in the EU by total gross value added in 2019.

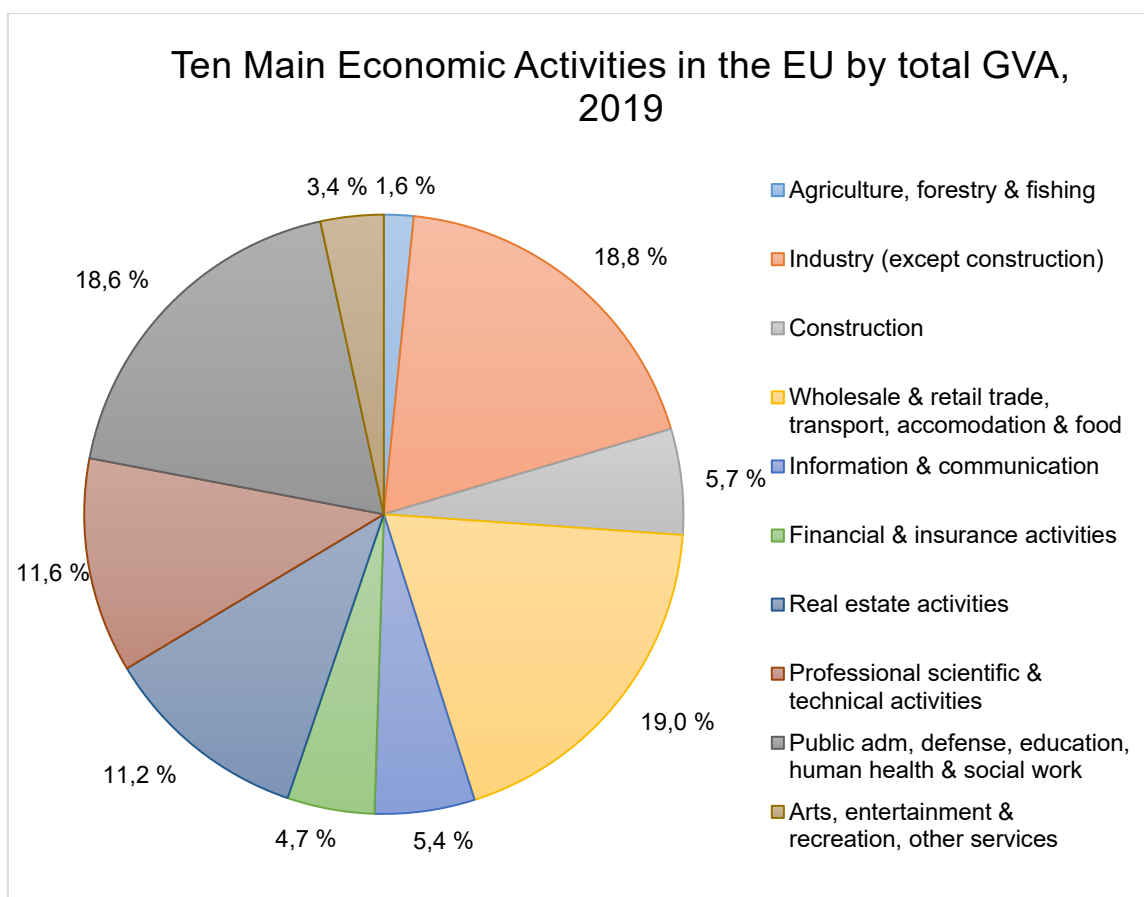


Figure 3 Share of ten main economic activities in EU total GVA (Eurostat 2020e)

The figure presents the ten main economic activities in the EU. The activities are divided by the total Gross Value Added (GVA), an economic productivity metric measuring the output minus intermediate consumption (Eurostat 2019). The biggest three economic activities within the EU are wholesale & retail trade, transport, accommodation & food (19.0%), industry except for construction (18.8%) and public administration, defense, education, human health & social work (18.6%) (Eurostat 2020e). Large enterprises are producing most of the total value added in most industrial sectors, including network energy supply, manufacturing, transportation and storage, water supply, sewerage, waste, and recycling. Service-based sectors such as real estate, repair and accommodation, and food services are dominated by SMEs. (Eurostat 2011, 21.)

As a large market, the EU can influence numerous other countries through trade-related decisions. The union is able to impact consumption and production patterns globally. By pushing the sustainable action, the EU increases awareness and international negotiations related to corporate social responsibilities. (Iacobuta 2020.)

### 3 CLIMATE CHANGE

#### 3.1 Definition

Climate change refers to a long-term change in the average weather pattern in Earth's climate. The definition also encompasses extreme weather conditions, shifting wildlife populations and habitats, rising sea levels, and various other impacts. (National Geographic 2020.) Climate change is often referred to as global warming. However, global warming refers only to the long-term heating of Earth's climate since the pre-industrial period (Nasa Climate 2020a). The pre-industrial period implies the time between 1850-1900 (Amos 2017). The global average temperature has increased approximately by 1 degree Celsius ( $^{\circ}\text{C}$ ) due to human activities (Nasa Climate 2020a).

Studies have shown that from the mid-20th century, the climate started to warm up globally due to an increase in the "greenhouse effect". Figure 4 illustrates the change in global average temperatures from 1880 to 2019.

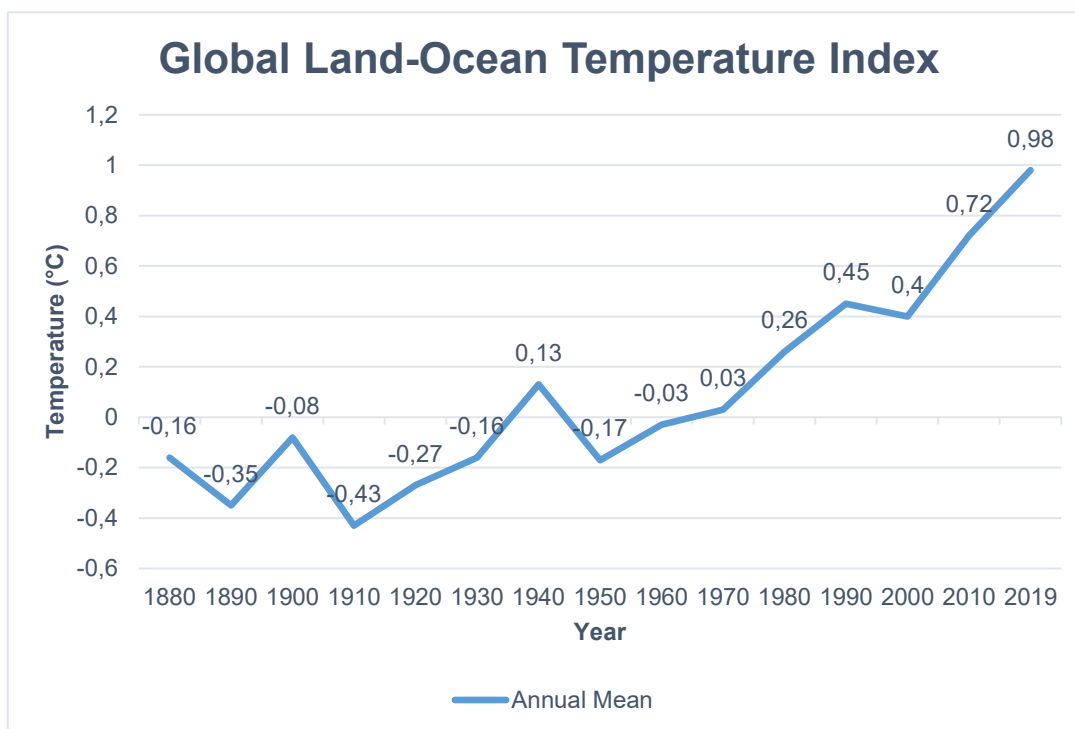


Figure 4 Global Land-Ocean Temperature Index (Nasa Climate 2019)

The vertical axis refers to temperature degrees  $^{\circ}\text{C}$ , and the years are presented on the horizontal axis in the figure. The blue trend line shows temperature in each decade and the evolution of the annual mean temperature. The figure shows a steady increase in temperatures with a strong peak from the turn of the century. Nineteen of the 20 warmest

years on the record have been since the year 2001, with the exception of 1998. (Nasa Climate 2019.) “The greenhouse effect” that creates the temperature rise refers to a phenomenon of gases being trapped in the atmosphere blocking the heat from escaping the Earth – making the Earth one enormous greenhouse. The most common greenhouse gases (GHGs) are carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. (Nasa Climate 2020b.)

### 3.2 Greenhouse Gases

Greenhouse gases (GHGs) are chemical compounds that are in Earth’s atmosphere. GHGs allow direct sunlight to reach the surface of the Earth and warm it. However, as the heat reflects from the surface, GHGs absorb the energy and keep the heat trapped in the lower atmosphere. This decreases the amount of heat entering back to space and increases the temperature of the climate. The GHGs are naturally present in the Earth, yet the atmospheric concentrations have been skyrocketing over the last few centuries. (NOAA 2020.) CO<sub>2</sub>, methane, and nitrous oxide are covered in this sub-chapter as they are the most common GHGs.

CO<sub>2</sub> is emitted as living things, such as humans and animals, breathe. CO<sub>2</sub> pollution refers to emissions from fossil-fuel burning activities caused by humans, such as planes, cars, and power plants. CO<sub>2</sub> is the most common greenhouse gas and the main driver for climate change. (Nunez 2019a.) The gas is responsible for 64% of human-made global warming (European Commission 2020c). The amount of CO<sub>2</sub> in the atmosphere has grown exponentially since 1850. The growth in emissions is linear to the growth of the human population, GDP, and fossil fuel emissions. (Brooke & Bevis & Rissing 2019.) In 1900, the annual carbon dioxide emissions were 1.95 billion tonnes, and in 2017 the amount was over 34 billion tonnes higher, 36.15 billion tonnes in total (Ritchie & Roser 2020). There are several reasons why emissions have risen. Burning coal, oil, and gas produce CO<sub>2</sub> and other greenhouse gases. One of the major issues is deforestation. Cutting down the forests releases the carbon stored in the trees and decreases the amount of emissions that could be absorbed by the forests. (European Commission 2020c.) Usually, the lifetime of CO<sub>2</sub> in the air is between 20 to 200 years. Therefore, once the CO<sub>2</sub> is emitted, it continues to affect the climate for numerous years. (Clark 2012.)

Methane, on the other hand, is responsible for 23% of the GHGs that are creating global warming. Even though the amount of it in the atmosphere currently is not as significant as CO<sub>2</sub>, it has a global warming potential of 28 times larger than CO<sub>2</sub>. This makes methane extremely powerful and dangerous GHG. Compared to the pre-industrial period, the amount of methane is at the moment 2.6 times greater. (Future Earth 2020.) In contrast to

CO<sub>2</sub>, methane is relatively short-lived GHG and only stays in the atmosphere for approximately 12 years (Clark 2012). Methane is mostly emitted by livestock, landfills, and the gas industry (Nunez 2019a). All the grazing animals account for 40 percent of the annual methane emissions, and the demand for livestock is continuously growing. Agriculture, such as rice production, also creates a fair amount of methane. In gas and oil drilling sites, methane can leak into the atmosphere. There have been regulations regarding the allowed amount of leakage, yet the regulations are hard to monitor. In addition to these factors, waste and microbes in the landfills and sewage treatment facilities are major creators of the emission. (Borunda 2019.)

Nitrous oxide is GHG, mostly created by the agricultural industry. Other nitrous oxide sources are power plants, industry and chemical production, manure management, and transportation. In agriculture, the common factors creating the emission are fertilized soil and animal waste, making it harder to tackle. Like the other GHGs, nitrous oxide traps the heat in the atmosphere. In addition to that, when exposed to sunlight and oxygen, nitrous oxide damages the ozone layer, which is supposed to prevent most of the sun's ultraviolet radiation from reaching the surface of the Earth. (Shankman 2019.)

The GHGs are usually measured as CO<sub>2</sub> equivalents. The term is a metric measure that is used to compare the different GHG emissions. The measurement converts the amount of other gases equivalent to the amount of carbon dioxide with the same global warming potential. Usually, CO<sub>2</sub> equivalents are expressed as million metric tonnes of carbon dioxide equivalents. (Eurostat 2017.) Also, as the GHGs are measured in the corporate world, they can be categorized into "Scopes". Scope 1 refers to the emissions directly owned and controlled by the source, including fuel combustion, the company's vehicles, and fugitive emissions. Scope 2 refers to the indirect emissions from purchased electricity, steam, heating, and cooling consumed by the company. Lastly, Scope 3 includes all indirect emissions throughout the company's value chain, including the use and disposal of sold products. (Carbon Trust 2020a.)

### 3.3 Impacts of Climate Change

Climate change has severe effects on the environment around the world. The consequences are diverse and affect ecosystems, wildlife, water, human health, energy, transportation, and agriculture (National Oceanic and Atmospheric Administration 2019). The increasing temperatures melt the polar ice shields, which, on the other hand, causes the sea levels to rise. Many regions experience extreme weather events, including everything from heat waves and droughts to rainfalls and storms. (European Commission 2020d.)

The ice is melting worldwide, yet most of it from the North and South pole. The ice includes mountain glaciers and the ice sheets covering West Antarctica and Greenland and the ice sea of the Arctic. Only the number of glaciers has dropped from more than 150 in 1910 to fewer than 30. (National Geographic 2020.) Alarming, also the ice sheet in Greenland and Antarctica is melting six times faster than in the 1990s, losing 6.4 trillion tons of ice in total (Nasa Climate 2020c).

The melting ice causes sea levels to rise. The rise of sea levels increases coastal erosion and the possibility of coastal storms such as hurricanes and typhoons. (WWF 2020.) The sea level is currently rising 3.2 millimeters annually, and the rate is faster year after year (National Geographic 2020). This creates flooding in the coastal areas and increases migration as people are forced to move to higher ground (Nunez 2019b).

The consequences of climate change affect the environment on the first hand, yet these impacts affect societies and the world's economy. A recent study shows that if further climate change prevention activities are not taken, the global annual GDP losses could be between 0.6% to 4.4% in 2060. By the end of the century, the annual GDP worldwide could decrease by between 2% to 10%. The agricultural industry will face issues as the crop yields are likely to drop, and labor productivity will suffer. The fields of energy and tourism will be affected negatively, yet the problem will face only specific regions leaving the global impact small. (OECD 2015.) For corporations, climate change leads to property and infrastructure damages. For example, the expenses of climate change related extreme weather conditions cost North America 415 billion dollars in 2016 to 2019, mostly due to wildfires and hurricanes. (Cho 2019.)

The effects on societies are related to expenses of migration and relocation of whole cities due to rising sea levels. The extreme weather conditions can affect local populations in the worst case leaving them in poverty, as the climate catastrophes potentially destroy cities, infrastructures, and homes. The impacts can also include an increase in the price of basic consumer goods and food and scarcity of fresh water supply in multiple areas. Even an increasing number of wars are likely since the limited amount of resources can lead to disruptions. (Iberdrola 2020.)

### 3.4 Climate Change in Europe

The consequences of climate change are global, and Europe is experiencing the same impacts of extremely high-temperatures and unpredictable weather events. Regarding Europe specifically, warmer temperatures increase the likelihood of desertification and droughts in Southern Europe. It is anticipated that the low-temperature extremes such as

frosty days are becoming less frequent and milder winters are the new normal. In contrast to that, the intense heat waves during the summers are expected to increase. Water scarcity is likely to rise in Europe due to reducing river flows in Southern and Eastern Europe. Currently, 40% of the water in Europe comes from the Alps. The melting snow and glaciers may lead to water shortages, which consequently can negatively affect the new renewable sources of energy, such as hydropower. The increase in sea-levels is a major risk for the European population. A third of the Europeans live within 50 kilometers of the coast. Also, these areas generate 30% of the total GDP of the EU. (European Commission 2020e.) Image 1 shows the possible consequences of climate change geographically in the European Union.

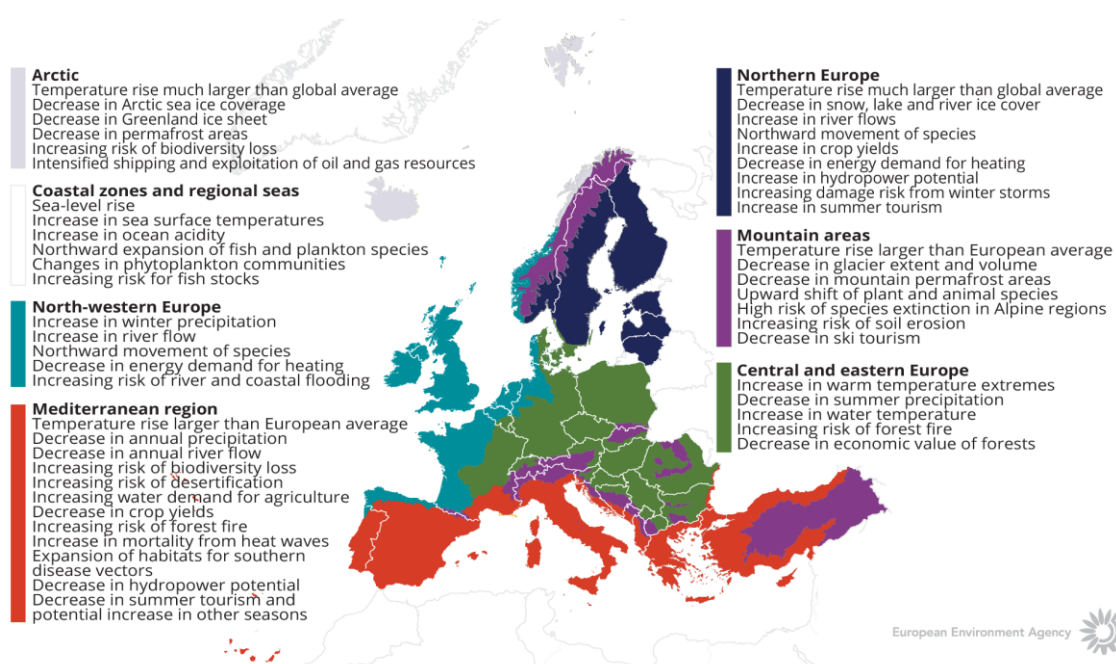


Image 1 Key observed and projected impacts from climate change for the main regions in Europe (European Environment Agency 2015)

The image presents already observed impacts and estimated effects of climate change in Europe. In the image, Europe is divided into seven main regions, which are the Arctic, Coastal zones and regional seas, Northern-western Europe, the Mediterranean region, Northern Europe, Mountain areas, and Central and Eastern Europe. All of the regions have different characteristics and, therefore, are affected differently by climate change. For example, the Northern parts of Europe are estimated to experience a much larger temperature increase than the global average. The Mediterranean region is faced with numerous severe impacts, such as the increasing risk of mortality and forest fires due to extreme heatwaves. (European Environment Agency 2015.)

The EU has contributed to the creation of the climate crisis. The amount of GHGs produced by the EU in 2018 was 3.9 billion tonnes (Tiseon 2020). With its 27 member countries, the EU is the third biggest emitter after China and the United States (European Parliament 2019). Globally, the EU is responsible for 10% of the total GHG emissions (European Commission 2018, 4). The GHG emission decreased between 2010 and 2014 in Europe, after which the emissions started to increase again. However, the emissions in 2017 were 19% lower compared to the levels of the 1990s. (Eurostat 2020f.) Figure 5 illustrates the share of greenhouse gas emission by its source within the EU in 2017.

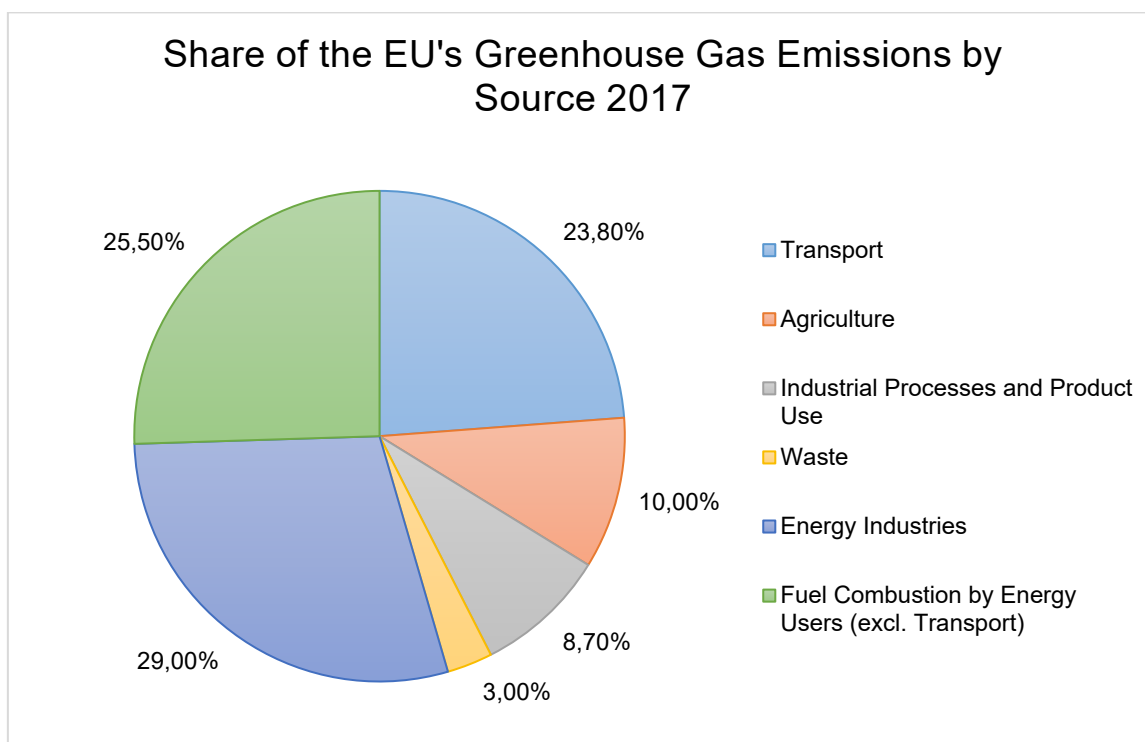


Figure 5 Share of the EU's Greenhouse Gas Emissions by Source 2017 (Eurostat 2020f)

The figure presents the division of GHG emission between transport, agriculture, industrial processes, and product use, waste, energy industries, and fuel combustion by energy users excluding transport. The biggest source of emissions was the energy industry (29%), followed by fuel combustion (25.5%) and transportation (23.8%) in 2017. (Eurostat 2020f.)

### 3.5 Paris Agreement

The serious and urgent global problem has brought up major collaborations between nations. In December 2015, a Paris Agreement for climate change was agreed upon by the parties in the United Nations Framework Convention on Climate Change (UNFCCC 2020a). The EU and 174 other countries signed the agreement for a sustainable low carbon future. The agreement's main goal is to keep the global temperature rise below 2

degrees and strive for limiting the temperature rise to 1.5 by reducing GHGs. (UNFCCC 2020a.) The agreement aims to reach the peak of global GHGs as soon as possible, after which the goal is to reduce the emissions caused by human activities fast. Also, monetary funds are directed towards sustainable development and low carbon economies. (Ministry of the Environment 2020.) The agreement also involves a plan to help developing countries as they are suffering most of the consequences of climate change, yet they contributed the least in creating the problem. The developed countries will provide financial aid for developing countries to mitigate and increase resilience to climate change. All the parties involved need to report regularly, every five years, on their emissions and sustainable development. (UNFCCC 2020a.) The first global review will be held in 2023 to determine what has been collectively achieved regarding the Paris Agreement's targets (The Ministry of Environment 2020). With these steps, the agreement aims to strengthen the global response to climate change (UNFCCC 2020a).

The agreement's implementation strategy covers comprehensive and common to all rules, with a few exceptions for developing countries. The rules include implementation mechanisms for reducing GHGs, details on national contributions, reporting, monitoring and assessment tools, rules of reporting, implementation of technology, guidance for communication, and procedures to promote compliance. (Ministry of Environment 2020.)

The Paris Agreement managed to create consensus among almost every country of the world, and it was able to develop a clear framework and set a commitment to emission reduction. Therefore, the agreement is a vital tool to fight climate change. (Denchak 2018.)

### 3.6 Intergovernmental Panel on Climate Change

After the Paris Agreement in 2015, the UNFCCC invited The Intergovernmental Panel on Climate Change (IPCC) to research the impact of global warming of 1.5 °C and provide a report regarding it (IPCC 2020). The report aimed to strengthen the global response to climate change. The report also compares the increase of 1.5 °C degrees to the 2 degrees agreed on in the Paris Climate Agreement.

As stated earlier, the Earth has already reached the estimation of 1°C higher average temperature in 2017 compared to the pre-industrial period of 1850-1900. Already, the rise in temperature has caused droughts, floods, and other extreme weather conditions such as the sea-level rise and biodiversity loss. (IPCC 2018a, 51-53.) If the temperature rises 2 degrees compared to the preferable 1, the adverse effects would be severe. For example, the sea level rise would be 0.1 meters lower if the limitation of temperature rise to 1.5 degrees would be possible. Also, species loss and extinction would be lower at 1.5 degrees

warming compared to 2 degrees. The oxygen levels and ocean acidity would benefit from limiting the rise to 1.5 degrees rather than 2, as it would reduce the increase in ocean temperatures. In addition to that, even in 1.5 degrees warmer world climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth will increase, but the impact would be more severe in 2 degrees increase. Thus, limiting global warming to 1.5 degrees compared to 2 would have clear benefits for the society and environment. (IPCC 2018b, 7-11.)

Limiting the warming to 1.5 °C degrees needs societal transformation and rapid implementation of ambitious greenhouse gas reduction measures. Also, institutional, social, cultural, economic, and technological changes will be needed. Without these, it is highly likely that the goal is not achieved. (IPCC 2018a, 447-475.)

## 4 CORPORATE SOCIAL RESPONSIBILITY

Corporate Social Responsibility or often referred to as CSR, is a term that first emerged already in the 1950s. Howard R. Bowen formed questions that are still relevant today in his book *Social Responsibilities of the Businessman* in 1953. The questions were the following: “What responsibilities do businesses have to contribute in positive ways to society?”, “What benefits might be derived from a more enthusiastic assumption of these responsibilities?” and “What practical steps could be taken to encourage businesses to give greater weight to these responsibilities in their decision making?”. (Beal 2014, 1.)

Since that, there have been numerous definitions and diverse concepts for CSR. Therefore, it is more important to identify central themes around the concept than point out one all-compassing definition (Burchell 2008, 79). In 2013, the term was defined as the alignment in businesses’ values and behavior and the expectations and needs of stakeholders, including customers, investors, employees, suppliers, communities, regulators, special interest groups, and society as a whole. The term refers to the company’s commitment to be accountable for all these stakeholder groups. Also, CSR as a term covers the themes of management of the economic, social, and environmental impact of their operations to maximize the value in the process and to minimize negative effects. In today’s business world, the key CSR issues are governance, environmental and labor standard management, employee and community relations, social equity, and responsible sourcing and human rights. (Beal 2014, 5.)

### 4.1 Triple Bottom Line

There are three pillars (3Ps) to CSR, which are People, Planet, and Profit standing for social, environmental, and economic responsibility of companies (Książak & Fischbach 2017, 96). 3Ps were presented in the triple bottom line (TBL) theory invented by John Elkington in 1994. By that time, companies were mostly recognized based on the economic value that they added. (Elkington 2004.) TBL was created as an accounting framework to focus not only on the economic value but also on social and environmental performance. In addition to reporting profits and losses, companies could report environmental measures such as electricity and fossil fuel consumption and social variables such as education and equity measurements. (Slaper & Hall 2011.) Since those days, the framework has extended from just an accounting tool to a wider framework to examine a company’s environmental, social, and economic impact (Elkington 2018). Figure 6 presents the triple bottom line.

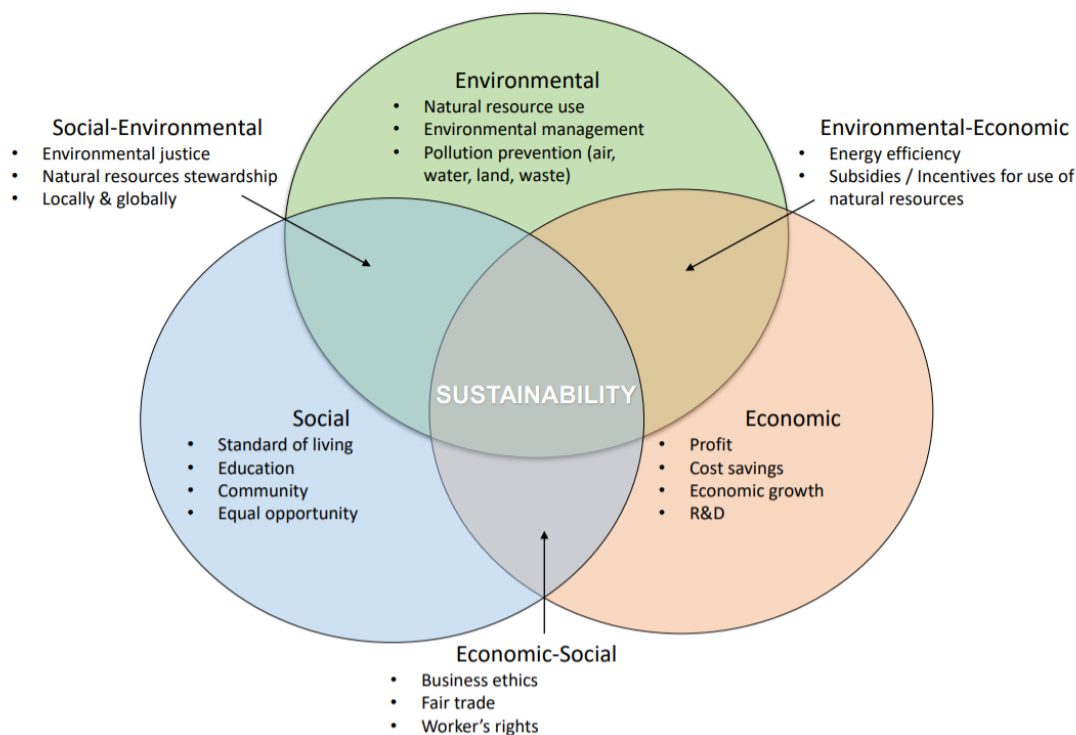


Figure 6 Triple Bottom Line (Bahadur & Waqqas 2013, 95)

The three pillars of TBL are presented in the circles in figure 6. In order for a company to be truly sustainable, it needs to be responsible regarding all the aspects; environmental, social, and economic. All of the elements are closely related and affect each other, creating social-environmental, environmental-economic, and economic-social factors. (Księżak & Fischbach 2017, 99.)

Closely related to the three P's is three E's; equity, economy, and environment. It lays the basis for the concept of sustainability, which is often referred to in the context with CSR and TBL. Sustainability was defined in 1987 as economic development that meets the needs of the present without compromising future generations' ability to meet their own needs. The basis for sustainability lies in supporting the human population and economic growth without threatening the environmental state of Earth. (Portney 2015, 2-7.)

#### 4.1.1 Economic Responsibility

The traditional bottom line, economic, involves financial performance such as profit, cost savings, economic growth, and research and development (Bahadur & Waggas 2013, 95). However, the profit aspect does not only limit to profits and loss. The economic aspect has a broader meaning in the sense of direct and indirect economic influence that the company has on local communities and other stakeholder groups. For example, a profitable company affects the GDP and purchasing power parity (PPP) positively, influencing

the standard of living. The higher economic performance also allows companies to pay more taxes directly and pay higher salaries, which are spent on consumer goods and indirectly to taxes again. Furthermore, a company with larger profits is able to allocate more resources to socially responsible activities. In that sense, these are a great example of how the economic pillar affects social and environmental pillars and how they often merge. (Książak & Fischbach 2017, 99-101.)

With economic responsibility comes also economic power. It is the base of capitalism and market economy that money and revenue come with a great amount of influencing power. Companies can influence consumers' daily lives and even the labor market's entities and the nature of welfare states. (Joutsenvirta & Halme & Jalas & Mäkinen 2011, 151.) Already in 2000, the power of businesses was recognized. Research regarding the topic called Top 200: The Rise of Corporate Global Power was published. (Pohl & Tolhurst 2010, 65.) The research found out that within the 100 largest economies in the world, 51 were corporations, while only 49 were countries based on the comparison of corporate sales and country's GDP. For example, Royal Dutch Shell was bigger than Venezuela and Sony bigger than Pakistan. The study concluded that corporations are often more powerful than countries and nations and therefore have a much greater impact on society than the actions of the countries. (Pohl & Tolhurst 2010, 65.) The same applies today as well. Today's corporate giants such as Apple, Microsoft, and Walmart are receiving revenues that outweigh many countries' GDPs (Belinchón & Moynihan 2018). In 2018 corporations accounted for 157 of the 200 largest entities in the world (Chapman 2018). A recent study also suggests that the power of big organizations has even grown as their revenues and profits are larger than a decade or two ago (Frick 2018). It is non-arguable that this level of economic power gives corporations a significant level of political influence, which enables them to impact both economic and political conditions (Burchell 2008, 48).

#### 4.1.2 Social Responsibility

The social side of TBL refers to the company's responsibility towards the standard of living, education, communication, and equal opportunity (Bahadur & Waqqas 2013, 95). It involves all the people company is connected to, including employees, suppliers, customers, and affected communities. The key issues regarding companies' social responsibility are labor and working conditions, employee and community relations, social equity, gender balance, human rights, good governance, and anti-corruption measures. (Unido 2020.) The "people" aspect is one of the most challenging parts to take responsibility for. In practice, social responsibility is often implemented only by compliance with the minimum requirement of employee welfare and human rights. (Tapanainen 2010.)

### 4.1.3 Environmental Responsibility

Corporate environmental responsibility (CER) refers to one of the aspects of sustainability, which requires companies to be aware of and manage their environmental impact (Suomi 2020). Environmental responsibility needs to cover all five core elements of business: mission, employees, operations, facilities & sites, and products & services (Townsend 2006, 72-73). The environmental risks occur throughout companies' supply chains and can affect nature, human health, and living conditions. The environmental impact needs to be minimized in all of the phases of the supply chain. This includes raw material production and procurement, all stages of manufacturing and delivery process, and the use of final product and disposal. (Suomi 2020.) Companies are increasingly focused on environmental risks and aware of the need for more than compliance with the minimum standards. Yet, the companies are struggling with measuring and mitigating the risks. (Zurich 2017.) Business activities can negatively impact the environment in the form of air and water pollution, waste disposal, and overuse of natural resources. Most of the companies require environmental inputs such as land, energy, and water, and therefore negative environmental impacts can also negatively affect the business. For example, in practice, water pollution affects the fish population and through that, the livelihood and business in the fish industry. Environmental issues also cause health problems that affect the labor force, one of the businesses' primary resources. (Majurin 2017, 5-6.)

The carbon emissions as one of the aspects of CER is in the center of the research and therefore studied more in-depth. Several studies have traced large percentages of the world's CO<sub>2</sub> emissions to multinational companies. A recent study emphasizes the impact these companies have on the environment and the positive influence they could have if processes and suppliers were chosen based on their sustainability and environmental performance. The global emissions could decrease significantly if the leading multinational companies exercised leadership on climate change. (Nield 2020.)

Global emissions can be allocated regarding industries and activities. The fuel industry is on top of the list of industries with the most massive emissions (Howell 2020). Carbon Majors Database's research (2017) studied the relationship between fossil fuel companies and CO<sub>2</sub> emissions. The research studied 100 fossil fuel producers and found out that they create 923 billion tonnes of CO<sub>2</sub> emissions, meaning 52% of the global GHGs since the industrial revolution. The study suggests that already in 1988, the fossil fuel companies recognized the effects of their products on the environment. Regardless of that, most companies expanded the extraction activities while investment in the non-carbon, renewable energy sources were almost non-existing. The research concludes that only 25

corporate and state producing entities are responsible for over half of the global industrial emissions since human-induced climate change was recognized. (Carbon Majors Database 2017, 5-8.)

Studies showing similar results can be found from numerous sources. For example, The Guardian (Taylor & Watts 2019) revealed that 20 fossil fuel firms are behind a third of all carbon emissions since 1965. The companies were researched based on the annual amount of oil, natural gas, and coal production. Also, the amount of carbon and methane produced throughout the supply chain was calculated. The research declares that these companies and their products can be held accountable for the climate crisis and that they do have a significant moral, financial, and legal responsibility for the issue.

Another research shows that nearly two-thirds of the major industrial GHGs are produced by 90 companies around the world. The companies either emitted the carbon by themselves in their operations or they supplied the carbon to consumers and industries that released it. This study was argued to be unfair by holding the fossil fuel industry responsible for consumers' choices. (Starr 2016.)

Within the research area of the EU, the allocation of emissions regarding economic activity are shown in the Figure 7.

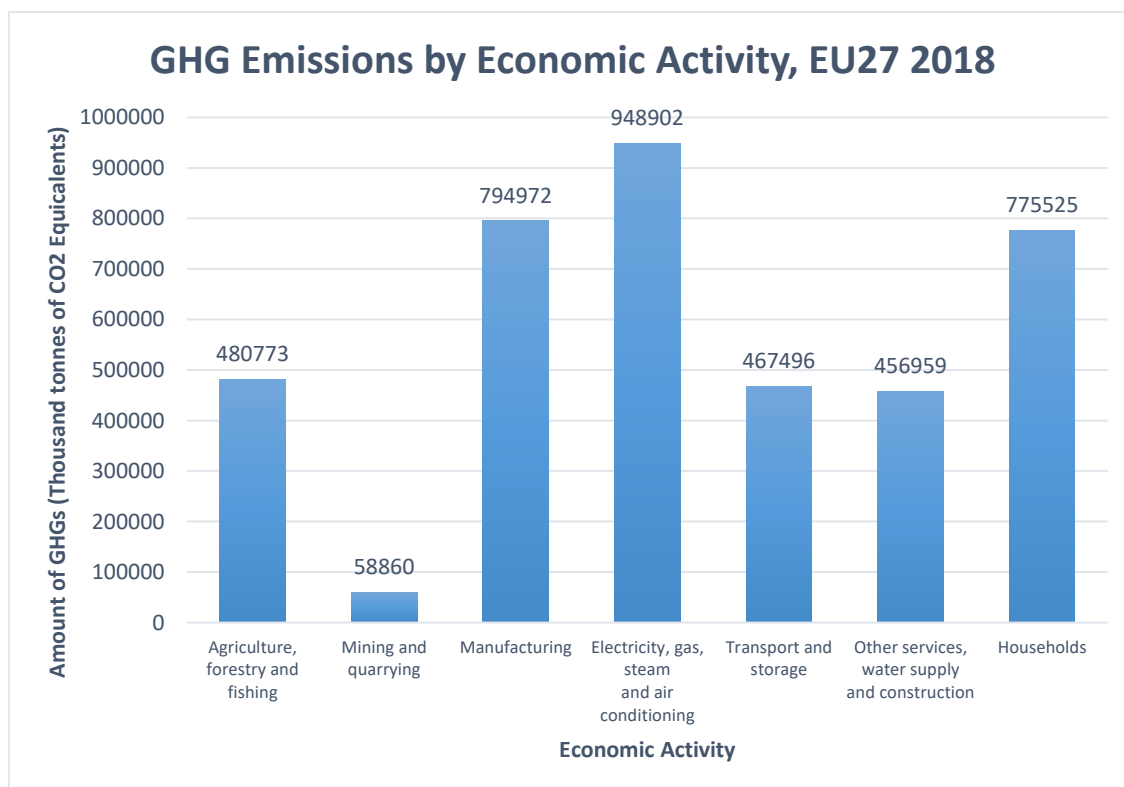


Figure 7 GHG emissions by economic activity, 2018 (Eurostat 2020g)

The figure shows the allocation of GHG emissions between economic activities in 27 EU's member countries in 2018. The GHGs are divided between seven different economic activities. The overall amount of GHG emissions including both households and production activities was 3,983,487 thousand tonnes of CO<sub>2</sub> equivalents. The emissions of households account up for 19.5% of the total amount of emissions. Regarding the production activities, manufacturing and electricity, gas, steam and air conditioning takes the largest parts. (Eurostat 2020g.)

#### 4.2 Upstream and Downstream Responsibility

The concept of responsibility has also widened over time. CSR is not limited to the company's own actions. The responsibility can be divided into upstream, including the production-related activities, and downstream, which covers the product's consumption, including product disposal (Schrempf-Stirling & Palazzo & Phillips 2012, 354). Companies' large networks include numerous parties such as raw material suppliers, manufacturers, warehousing and shipping companies, wholesalers, retailers, and customer service specialists. Companies are often not performing most of their operations, yet they can be held responsible for those acting on their behalf. In numerous cases, businesses have received backlash regarding issues that are taking place in some organizations within the company's network. The companies might be unaware of the misconduct, yet stakeholders such as consumers, media, and activist organizations hold the company accountable for these actions. (Savitz & Weber 2014, 28.) The suppliers in the network can be classified based on how far away they are in the supply chain. The supplier of the end product (OEM) is called the 1st-tier-supplier. The supplier of that supplier is called 2nd-tier-supplier and so forth. (LiegI 2019.) Companies with supplier sustainability standards are expecting their first-tier suppliers to comply with their requirements and consecutively expecting the first-tier to have the same requirement for the second-tier. However, this is not often the case. Studies have shown that sustainability standard violations are almost without expectations occurring further in the supply chain. Harvard Business Review researched three multinational companies that are considered as sustainability leaders. The study investigated nine top-tier suppliers and 22 lower-tier suppliers in four countries, and violations were found in each country and most of the suppliers. The violations were everything from lack of environmental management, social problems such as sexual harassment, and hazardous working conditions to chronic overtime issues and airborne chemicals. All of those suppliers were part of a longer supply chain, proving that it is not possible to expect lower-tier suppliers to supervise the sustainability performance on behalf of the company. (Vilena & Gioia 2020.)

The downstream responsibility can relate to how the company's products impact the consumers and society overall (Schrempf-Stirling et al. 2012, 354). It can be considered that the economic responsibility of companies ends as the purchase takes place, yet the social and environmental responsibility does not. Companies need to focus on their products' whole life cycle, as there are risks related to the use, disposal, and recycling of the product. (SBC Value Chain Guide 2020.) For instance, businesses can design the product so that it is easy to recycle, reuse, or refurbish to demonstrate the downstream responsibility (Leblanc 2018).

### 4.3 Drivers for Corporate Environmental Responsibility

There are numerous drivers for companies to strive for better environmental performance. The most common reasons for companies to change their environmental behavior are regulation, reputational factors, and economic incentives. (Rademaekers & Williams & Ellis & Smith & Svatikova & Bilsen 2012, 9.) Also, non-governmental organizations and civil societies play a great role in today's sustainable development (Blood 2019).

#### 4.3.1 Environmental Regulations

Regulations are an important driver for the change of environmental behavior for businesses. Regulations are effective as they enforce businesses to comply with at least the minimum requirements. (Rademaekers et al. 2019, 9.) There has been a major increase in the number of global and national climate change laws in the past 20 years. In 1997 there were only 60 laws, and the number has increased to 1,260 involving 164 countries. (Evans 2017.) The current climate change laws cover sectors such as energy, transport, industrial policies, forestry, land use, air quality, poverty, and food security. Countries have different approaches to regulate and mitigate the issue. Some countries pass formal laws, while others create executive policies such as strategies and development plans. (Nachmany & Fankhauser & Setzer & Averchenkova 2017, 8-10.)

The environmental regulations and laws have been widely debated regarding their effectiveness and impact on businesses. Some proof regarding the effectiveness has been presented. For example, in the United States, air quality has improved due to governmental policies (Williamson 2016). However, the United Nations (2019) found out that even if the number of laws was increasing, the implementation and enforcement of the laws were inadequate. There is also a growing trend of resistance to environmental laws, which has led to criminal activities and attacks on environmental defenders. Better decision making from the governments, more actions from the companies, and more effective

environmental laws are needed to create deeper, more effective engagement. (United Nations Environment Programme 2019.)

Studies have also shown another negative trend regarding stricter environmental policies. Countries with tight domestic environmental regulations are indeed creating a smaller carbon footprint. Yet, the commitment to regulations should be global and cross the national borders. It has been researched that companies from highly regulated countries are taking their emissions to other countries with weaker environmental regulations. Harvard Business Review studied 1,800 international firms and their reported CO<sub>2</sub> emissions, and while companies had 29% lower emissions domestically, the tight regulations resulted in 43% higher emissions abroad. All in all, there was still a decrease of 15% in emissions due to the domestic regulations. (Itzhak & Kleimeier & Viehs 2019.)

The issue with legislation is complex, as while it is enforcing and could be a solution for climate change, the current state of implementation of laws is not enough. Traditionally laws are created for a specific legal certainty that simplifies and categorizes reality. Biodiversity, on the other hand, is extremely complex, continually evolving, and still widely unknown, which creates a significant challenge for tailoring environmental laws. The laws are often too vague and difficult to monitor and assess. (Maljean-Dubois 2017, 9.)

#### 4.3.2 Brand

The aim for better, more responsible brand and company image can act as a driving force for environmentally friendly actions of companies. A brand can be defined as the perception that a consumer has about the company or a product (McLaughlin 2011). Sustainable marketing refers to the promotion of the company's environmentally friendly and socially responsible products, practices, and brand values. It has become an integral part of several companies' marketing activities to communicate the responsibility and the company's environmental and social initiatives. (Story 2019.) Well-integrated sustainability improves the reputation of the company and, thus, increase brand value. Sustainable brands can also act as drivers for a more sustainable future by showing an example and positively influencing others. (Oliveira & Sullivan 2015, 4.) A recent study showed that 37% of the consumers consider the environmental impact of a product before the purchase, and 72% were actively buying more environmentally responsible products compared to five years ago (Martins 2019). This concludes that branding your company and products ecologically sound affects the image that customers have of your brand.

Companies understanding the value of the sustainable, environmentally friendly brand has also created a negative effect called greenwashing. Greenwashing refers to a company's

actions of investing more time and money in marketing themselves as environmentally sustainable than actually minimizing their environmental impact (Corcione 2020). The aim of greenwashing is to make consumers believe that the company is doing more to protect the environment than they are in reality. Greenwashing can occur due to the lack of sustainability knowledge, yet it is often intentionally carried out by marketing activities. Many major companies have been caught up in greenwashing. For example, Volkswagen admitted to cheating regarding their emission tests, and meat producer Tyson falsely claimed to sell antibiotic-free chicken. (Acaroglu 2019.)

### 4.3.3 Non-governmental Organizations

One significant force behind the strive for better CSR performance, including CER, is the non-governmental organizations (Wu 2019). A non-governmental organization (NGO) is a non-profit group that is functioning independently of any government. NGOs can be referred to as civil societies organized on the community, national, and international levels to strive for a social or political goal. NGOs can be classified regarding the issues they are focusing on, for example, ENGOs are environmental non-governmental organizations. NGOs receive their resources often from private donations and membership fees, and their budgets can be up to millions or billions of dollars each year. (Folger 2020.)

Numerous reasons, including globalization, have transformed world politics and international development. One major influencer has been the increasing number of NGOs, which have affected public policy at local, national, and global levels, including nearly any policy-making and international relations aspect. NGOs have gained positions in numerous negotiations, especially regarding human rights, peace, and the environment. In addition to that, NGOs have played a significant role in disaster relief, humanitarian aid, and development assistance. (Tortajada 2016.)

NGOs influence international organizations by promoting dialogue and collaboration and implementing sustainable development (United Nations Environment Programme 2020). Also, many NGOs experience lobbying and activating citizens by providing information considering an efficient way of influencing (Kuvaja 2009). In the study related to the United Nation's Global Compact 2019, the corporate leaders disclosed that NGOs are a stakeholder group having the greatest impact on managing sustainability over the next five years (Buckingham 2020). The United Nations Global Compact will be covered in the next sub-chapter, as it is one of the cornerstones of sustainable development.

#### 4.3.4 United Nations Global Compact

The United Nations is an internationally operating organization that was founded in 1945. The main organs of the organization are the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the International Court of Justice, and the UN Secretariat. United Nations has widely researched corporate social responsibility issues and campaigns against problems such as climate change, sustainability, terrorism, violence against children and women, and many more. (United Nations 2020a.)

The United Nations has created the world's largest corporate sustainability initiative: United Nations Global Compact. The initiative demands companies to align their strategies and operations with universal principles regarding human rights, labor, environment, and anti-corruption (United Nations Global Compact 2020a). To support the development, they have set Ten Principles and 17 Sustainable Development Goals (SDGs) for companies to work with (United Nations Global Compact 2020b). The 17 SDGs are presented in the Image 2.



Image 2 Sustainable Development Goals (United Nations 2019)

The goals are a base for a better and more sustainable future for everyone and address global challenges such as poverty, inequality, climate change, environmental issues, and peace (United Nations 2020b). The goals include 169 targets that need to be achieved by 2030. The achievement requires effort from governments, corporates, and civil society organizations and is therefore heavily related to CSR. Corporations are seen as the key

drivers for this change and are expected to apply their creativity and innovation to solving the sustainability challenges. (Kurian 2018.)

The SDGs are calling each company for action. What this means for companies in practice is identifying the issues, preventing them, mitigating risks, and accounting for all the negative impacts company has on society and the environment. United Nations emphasizes leadership and top-level commitment to incorporating sustainability into business activities. Leaders need to set long-term visions that include ambitious goals, adjustment of policies and procedures and investment in government affairs, training and motivating employees, integration of sustainability throughout the supply chain, and disclosure regarding their efforts and outcomes. (United Nations Global Compact 2015.)

The SDGs are hard to achieve alone, therefore collaboration is also needed. Companies are required to collaborate and co-invest in solutions that could solve shared challenges. The collaboration involves all the stakeholder groups. It also includes peer companies to set partnerships and collective efforts to find solutions faster. (United Nations Global Compact 2015.)

All of the above needs to be disclosed with full transparency to all stakeholders. Transparency is demanded by regulators, investors, consumers, and other groups. Reporting communicates accountability for the promises companies have made. In order to report the performance, ways to measure sustainability impacts are needed. (United Nations Global Compact 2015.)

UNFCCC (2020b) has also presented practical tips regarding energy, transportation, and management for companies to reduce their emissions. Regarding the use of energy, companies can complete energy consumption audit to identify the level of consumption in different facilities. Also, committing to renewable energy is a practical step for companies. Transportation tips are related to remote working, such as allowing staff to work in the home office to reduce transportation emissions and organize video conferences instead of business trips. When transportation is needed, the company can encourage employees to take public transportation by providing price offers. On the management level, the company can adopt environmental management systems, improving office energy performance with simple actions such as energy-saving lighting, energy-efficient appliances, and reduction of paper files.

#### 4.3.5 Voluntary Sustainability Standards

Companies can acquire voluntary sustainability standards that guarantee their environmental and social sustainability. The standards concentrate on environmental factors and

the protection of social and labor rights. The standards are created by numerous parties, including single businesses, NGOs, and governments who grant the certifications. (United Nations Forum on Sustainability Standards 2020.) Companies can acquire standards regarding environmental and energy management, emission verification, carbon neutrality, and social accountability, to mention a few (Bsi 2020).

ISO is an independent international NGO that has 165 national standards bodies. Currently, they have created 22,500 international standards and are creating approximately a hundred new each month. (ISO 2019.) Regarding social responsibility, ISO has developed an ISO 26000 standard. It provides a standard for both the public and private sectors to implement socially responsible manner in their operations. The standard provides guidance regarding social responsibility. The standard covers background information, social responsibility trends, principles, practices, core subjects, and issues. The standard also provides information on integration, implementation, and promotion of responsible behavior throughout the organization. It assists in engagement with stakeholders and communication of commitment and performance. However, the ISO 26000 cannot be used for certification as it does not have any requirements. The standard is only used as guidance for companies to address core subjects of social responsibility and encourage organizations beyond only the minimum legal requirements. (ISO 2020a.) Environmental issues are covered in the ISO 14000 standard family for environmental management. ISO 14001 sets standards for an environmental management system to help organizations to improve their performance regarding environmental issues. The standards aim to efficient use of resources and reduction of waste and through these steps gaining competitive advantage and the trust of stakeholder groups. An environmental management system helps in the identification, management, monitoring, and control of environmental issues. Also, the standard requires continual improvement, and therefore the standard is revised from time to time. The standard provides multiple benefits such as deeper employee engagement, improved brand image, and confidence among stakeholders. (ISO 2020b.)

Many parties provide certification for carbon neutrality. For example, Carbon Trust provides certification and standards regarding energy. (Young 2019.) Carbon Trust is a global leader in climate impact reduction, and it aims to assist companies towards a low carbon future (Carbon Trust 2020b). Carbon Trust provides carbon neutral certification, standards regarding the best practice, and they also collaborate with ISO (Carbon Trust 2020c).

## 5 EMPIRICAL RESEARCH AND DATA ANALYSIS

### 5.1 Data Acquisition

The research started in the Spring of 2020. The process began by contacting the thesis supervisor and planning on the thesis idea. The active research period was four months, and it started in August 2020. In August 2020, a schedule and comprehensive plan for the thesis were made. In September 2020, the author began to research the theory regarding characteristics of European economy, climate change and CSR. The data of theoretical framework was collected comprehensively from secondary sources, including literature, previous studies, and publications of many parties such as European Union and numerous NGOs. The data gathered formed the basis for the research as the theoretical part of the thesis. The outcome was a comprehensive overview of the research background. In October 2020, the study continued to the empirical phase, which included data collection regarding the EU's climate-neutral vision and five large European companies. The data was collected comprehensively from secondary sources. The data regarding climate-neutrality was collected from the publication of the EU. The companies' information was collected from the annual and corporate social reports between the years 2013-2019. Also, the websites of the companies were used as a source. Companies that the research focused on was Royal Dutch Shell, DHL, Vattenfall, Unilever and Stora Enso. At the beginning of November 2020, the empirical part was ready, and the research results were analyzed. During the first weeks of November, the thesis was finalized.

### 5.2 Introduction of the Data

This chapter introduces the gathered data. First, the EU's climate-neutral vision is presented. The seven main strategies of the EU's vision will be covered. This is followed by the introduction of five large multinational European companies. The companies are Royal Dutch Shell, DHL, Vattenfall, Unilever, and Stora Enso. The case companies represent the industries of fast-moving consumer goods (FMCG), oil and gas, logistics, energy, and forestry and paper. The industries of choice are major players in climate change, and therefore companies from these specific industries have been chosen. Also, the specific companies were chosen due to their large market share within their industries. The companies will be introduced briefly, and the main focus will be on their environmental performance and corporate social responsibility reports. The companies' efforts will be compared to the seven main strategies the EU provided in its vision. The companies' current impact on the environment will be analyzed, and their sustainable development plans will be covered. The data will be compared to the findings provided in the theoretical

framework to assess the amount of responsibility these companies share. The introduction and individual analysis of companies will be followed by the discussion of the results, which will provide in-depth data analysis regarding the corporate social responsibility in the EU's vision.

### 5.2.1 Climate-Neutral European Union by 2050

In 2018, the European Union presented its vision for a "Modern, competitive, prosperous and climate-neutral economy" by 2050. The vision aims to transform the EU into a climate-neutral economy to lead the climate action globally. The vision does not include new policies. Instead, it is a base for the transformation and sets a direction for the EU's climate and energy policies. The vision is in line with the Paris Agreement and United Nations SDGs. Based on the evidence IPCC report provided regarding climate change, the EU concluded that immediate and decisive climate action is necessary. Climate change and global warming are going to affect Europe's economy, infrastructure, food production, public health, biodiversity, and political stability, and therefore the consequences need to be minimized. Already in 2017, the weather-related disasters caused damages worth 283 billion euros in the EU. (European Commission 2018, 2.) Currently, the EU is responsible for 10% of the global GHG emissions (European Commission 2018, 24). In 2018, the EU produced 3,893 million tonnes of CO<sub>2</sub> emissions (Eurostat 2020h). Achieving the carbon neutrality will require additional investment worth hundreds of billions a year, and most of it will be needed from private businesses and households. However, the overall economic impacts of a carbon neutral EU are estimated to be positive as the EU's economy is expected to more than double by 2050 compared to 1990. (European Commission 2018, 16-19.) European Union has introduced seven main strategies to achieve net-zero greenhouse emissions by 2050.

The basis for the first strategy is in the maximization of energy efficiency, including zero-emission buildings. The energy consumption should be reduced by half compared to the year 2005, and energy efficiency plays a key role in it. Currently, the residential and service sector's buildings are responsible for 40% of the EU's energy consumption. The strategy would utilize digitalization and home automation. Also, labeling and setting standards for the electronic appliances for both electronic devices imported to the EU and exported from the EU would be used as a solution. (European Commission 2018, 8.)

The second strategy aims to maximize the use of renewables to decarbonize Europe's total energy supply. The current energy system is highly dependent on fossil fuels. The change requires the majority of the energy coming from renewable sources. Renewable energy will also play a major role in decarbonizing transport, heating, and industry sectors.

Also, the strategy would decrease Europe's energy import dependency, as over half of the oil and gas are imported. (European Commission 2018, 8-10.)

The third scenario embraces clean, safe, and connected mobility. Transportation is responsible for around 25% of the GHGs in the EU. The strategy demands a system-based transportation approach where low and zero-emission vehicles are prioritized. New technologies and innovations are needed since electrification is not a solution for all transport modes. For example, long-distance trucks cannot benefit from batteries as their reach is not long enough. Therefore, the development of new fuels is also essential. (European Commission 2018, 10-12.)

The fourth strategy aims for a competitive EU industry that uses the circular economy model as a method to reduce emissions. The demand for primary raw materials has constantly been growing. Higher recycling rates would increase resource efficiency. The reduction of material input and increase in re-use and recycling would lead to a more sustainable EU. The strategy is part of a new industrial revolution, as many of the current processes need to be modernized or even replaced completely. (European Commission 2018, 12-13.)

The fifth vision focuses on developing adequate smart network infrastructure and interconnections. This requires deeper cross-border and regional co-operation to build infrastructure for future developments such as energy transmission and distribution networks. Smart electricity, data grids, and for example, hydrogen pipelines are needed for this strategy. (European Commission 2018, 13.)

The sixth scenario aims at the bioeconomy and creation of carbon sinks. The core of the solution is sustainable biomass, which can supply heat and be developed into biofuels, biogas, and biochemicals substituting the carbon intensive materials. The amount of biomass usage needs to increase around 80% by 2050. Agriculture will be needed also in the future, and it causes inevitable emissions. The strategy focuses on decreasing the environmental impact of agriculture with integration of smart technologies, while benefiting from the agricultural land to store carbon. Increasing the amount of natural sinks, including forests, soils, agricultural lands and coastal wetlands will be vital for the strategy. (European Commission 2018, 13-15.)

The seventh and last solution is based on carbon capture and storage to tackle remaining CO<sub>2</sub> emissions. Carbon Capture and Storage (CCS) would be necessary for the energy-intensive sectors to competence remaining GHGs. However, the development of the technologies is relatively slow, and it cannot be guaranteed that there will be operational carbon capture plants by 2050. (European Commission 2018, 15.)

Striving towards all of the strategies will be crucial for making the vision happen. The framework hopes to boost research and development, increase the investment from private sectors and provide signals of the future for markets.

### 5.2.2 Royal Dutch Shell

Royal Dutch Shell, often referred to as Shell, is a globally operating group of energy and petrochemical companies (Shell 2020a). The company's main business activities include the exploration, production, refining, and marketing of oil and natural gas, in addition to manufacturing and marketing chemicals (Shell 2019a, 12). The company has over 80,000 employees and is operating in more than 70 countries (Shell 2020a). The company was founded in 1907 when Shell merged with Royal Dutch forming the Royal Dutch Shell Group (Shell 2020b). The company received 344,877 million dollars in revenue in the fiscal year 2019 (Shell 2019a, 10). The upstream segment of the company includes the extraction of crude oil and natural gas and marketing and transportation of oil and gas. The downstream segment, on the other hand, includes manufacturing, marketing, and trading oil and chemicals. These segments accounted for approximately 88% of the total revenue of the company. In contrast to that, the Integrated Gas segment, which covers liquified natural gas (LNG) and other products such as the New Energies portfolio, accounted only for 12%. (Shell 2019a, 206.)

The sustainability report (2019b) of Shell covers a contribution to society, responsible business, including human rights, safety and environment, sustainable energy future, and performance data. The report has been conducted according to the standards of Global Reporting Initiative (Shell 2019b, 6). Within the report, the company addresses the United Nations SDGs. According to Shell, the most relevant ones for them are Goal 7: "Ensure access to affordable, reliable, sustainable and modern energy", Goal 8: "Decent work and economic growth" and Goal 13: "Climate action". (Shell 2019b, 13.) The company mentions the Paris Agreement and supports it (Shell 2019b, 11). Shell does not mention climate-neutral EU vision in its sustainability report. However, the company has acknowledged the vision and published a sketch regarding it. The sketch does not provide information regarding their actions towards the vision but a scenario of what the EU has to do to decarbonize energy within the next 30 years. (Shell 2020c.) The company reports on collaboration with 17 different organizations related to environmental sustainability (Shell 2019b, 66).

The environmental performance data concludes the company's GHG emissions, energy intensity, acid gases, spills and discharges, water consumption, and waste disposal (Shell

2019b, 86-90). For the purposes of this research, the data related to GHG emissions are gathered in the Table 1.

Table 1 Shell, environmental data 2016-2019 (Shell 2019b, 88)

Shell, Environmental Data 2013-2019							
	2013	2014	2015	2016	2017	2018	2019
Total direct GHG emissions (Scope 1) (millions tonnes CO2 equivalent)	73	76	72	70	73	71	70
CO2 emissions (Scope 1) (millions tonnes CO2 equivalent)	71	73	68	67	70	68	67
Energy indirect GHG emissions (Scope 2) (million tonnes CO2 equivalent)	10	10	9	11	12	11	10
Use of Shell's refinery and natural gas products (Scope 3) (million tonnes CO2 equivalent)	600	600	560	600	579	599	576

Table 1 presents the total GHG emissions of Shell, including Scope 1, 2, and 3. Also, the CO2 emissions of Scope 1 are included. Shell's direct GHG emissions are 70 million tonnes of CO2 equivalent and have slightly decreased from 2013. CO2 emissions take a large majority of the total GHG emissions as the amount of CO2 is 67 million tonnes CO2 equivalent. Scope 2 emissions have stayed at the same level compared to the year 2013. The GHG emissions of product usage have slightly decreased within the seven years. To sum up, the overall GHG emissions of Shell's value chain, including Scopes 1, 2, and 3, have slightly decreased, yet the amount remains extremely high for a single company. (Shell 2019b, 88.)

Shell has presented multiple approaches that the company is taking towards an environmentally sustainable future. Regarding the SDGs, their plans are the following. Towards Goal 7, their contribution relates to investing in low-carbon technologies to grow New Energies business's market share. They are also improving the facilities' energy efficiency and aiming to provide electric supply to 100 million people by 2030. (Shell 2020d.) Shell aims to reduce the overall energy consumption and recycle the waste heat of refineries

and chemical plants to supply electricity. The company is investing in renewable energy sources in the form of solar power in offices, retail sites, distribution terminals, refineries, and offshore platforms. In Australia, the company began the process of decarbonizing the electricity sector. (Shell 2019b, 81-83.) Regarding Goal 13, the company is supporting the Paris Agreement. Shell is becoming a net-zero emission energy business by 2050 by investing in low-carbon technologies, nature-based solutions, and CCS projects. (Shell 2020d.) Aims to be a net-zero emission energy business by 2050 or sooner include reducing the carbon intensity of products by 30% by 2035 and by 65% by 2050 compared to 2016. The carbon intensity measures include the full life-cycle of the products. (Shell 2020e.) The company does not provide information about reducing the amount of fossil fuel production. Shell is investing in protecting and developing natural ecosystems in the form of conservation, afforestation, and reforestation. The basis for this is a carbon offsetting service that they offer to their customers. Customers can compensate for their emissions by investing in carbon credits, which are used in projects to reduce and capture CO<sub>2</sub> emissions elsewhere. The company has also cut fuel consumption by 40% and air emissions by 20-25% in one of its platforms in the US Gulf. Also, the company is providing hydrocarbon as a low-carbon fuel. In addition to these approaches, the company takes part in the circular economy by using plastic waste as feedstock for chemical plants. (Shell 2019b, 77-83.)

Shell addresses corporate social responsibility thoroughly. It covers the United Nations SDGs and explains the steps towards achieving these goals. The company also acknowledges the Paris Agreement and the EU's vision on climate-neutrality and accordingly has published its plans to aim for net-zero emission energy business by 2050. Shell introduces approaches that are in line with the EU's seven strategies towards climate-neutrality. The company's contribution would be major for the EU's strategies two and three, considering the decarbonization of energy supply and sustainable mobility (European Commission 2018, 10-12). Overall, Shell manages to comprehensively address the current problems regarding climate change and has planned several approaches towards carbon-neutrality. The development of 7-year emission amounts, however, does not provide proof of efficient methods. Even if there is proof of reduction in emissions in some facilities, overall, the emissions have not decreased much. Shell highlights reduction in fuel consumption regarding one of the facilities, yet the company does not state decreasing the business activities related to fossil fuels, which is problematic. The total amount of GHG emissions in 2018 in the EU was 3.9 billion tonnes (Tiseo 2020). Shell's Scope 1 GHG emissions were 0.07 billion tonnes CO<sub>2</sub> equivalent (Shell 2019b, 88). These numbers compared, Shell's direct emissions account for up to 1.79% of the total GHG emissions within the EU.

However, it is worth noticing that Shell's value chain does not emit only within the area of Europe but rather worldwide. The numbers were only compared to demonstrate the scale of one company's emission against the total emissions in a union with 27 member countries. Compensating that amount of emissions requires massive investment in CCS and other fast-developing efficient solutions if a heavy reduction of fossil fuels is not planned. As a business operating in the fossil fuel and oil industry, the company shares great responsibility towards the EU's vision, as these companies are held responsible for the majority of GHG emissions (Carbon Majors Database 2017, 5-8; Taylor & Watts 2019; Starr 2016). Also, as the base of capitalism states, revenue comes with influencing power (Joutsenvirta et al. 2011, 151). Shell's revenue worth of approximately 345 billion euros in 2019 (Shell 2019a, 10) accounts for up to 2.48% of the total GDP of EU (Eurostat 2020a), which brings an enormous amount of influencing power for a single company. Overall, it can be concluded that Shell's responsibility towards climate change and the EU's vision is high.

### 5.2.3 DHL

DHL is a global logistics provider company that was founded in 1969. The company employs 38,000 people in more than 220 countries. (DHL 2020.) The company provides letter and parcel dispatch services, express delivery, freight transport, supply chain management, and e-commerce solutions. In the fiscal year 2019, the company made revenue worth of 63,341 million euros. (DHL 2019a, 1-4.)

The sustainability report 2019 of DHL covers matters regarding the group, resilience & integrity, employees, society, and environment. DHL is a part of the United Nations Global Compact and, therefore, integrates the SDGs into the strategy 2025 (DHL 2019b, 5). The SDGs that the company emphasizes are Goal 4: "Quality education", Goal 8: "Decent work and economic growth", Goal 11: "Sustainable cities and communities", Goal 13: "Climate action" and Goal 17: "Partnership for the goals". DHL briefly mentions the Paris Climate Conference in context with United Nations SDGs. (DHL 2019b, 26-27.) The company also uses ISO-certification, and in 2019, 58% of the sites were certified with either one or both ISO standards 14001 and 50001 (DHL 2019b, 86). The company does not mention the EU's vision in its sustainability report.

The environmental data that DHL discloses covers energy consumption, carbon efficiency, CO<sub>2</sub> emissions, water use, and the amount of fleet. In the Table 2, environmental data regarding energy consumption, CO<sub>2</sub> emissions, and vehicles have been gathered.

Table 2 DHL, environmental data 2013-2019 (DHL 2019b, 105-108)

DHL, Environmental Data 2013-2019							
	2013	2014	2015	2016	2017	2018	2019
Total energy consumption, fleet (Deutsche Post DHL Group fleet only) (million kWh)	18591	19032	20585	20798	21733	23243	23519
Fossil fuels = kerosene, gasoline, diesel, LPG (million kWh)	18545	18968	20510	20713	21658	23173	23468
Biofuels = Biodiesel, bioethanol (million kWh)	7	10	13	27	29	18	6
Total energy consumption, buildings (million kWh)	3393	3247	3113	3039	3194	3194	3139
Standard electricity (million kWh)	768	657	634	634	651	390	289
"Green" electricity (million kWh)	1056	1040	1056	1013	1086	1342	1392
Total vehicles			91973	92328	97165	98478	1E+05
Total vehicles with alternative drive systems		1976	2886	4177	7896	10843	13532
CO2 emissions (Scope 1) (million tonnes)	5,13	5,22	5,6	5,68	5,9	6,3	6,38
CO2 emissions (Scope 2) (million tonnes)	0,49	0,44	0,45	0,7	0,44	0,27	0,21
CO2 emissions (Scope 3) (million tonnes)	22,69	23,36	20,97	20,81	22,52	22,89	22,36

The table gathers environmental data of DHL during the years 2013 to 2019. The table contains information regarding energy consumption, emissions, and the number of vehicles. The total energy consumption of the fleet has increased steadily from the year 2013 until the year 2019. The use of fossil fuels has also increased by almost 5,000 million kWh

from the year 2013. The use of biofuels increased heavily until the year 2017. From that point, the consumption has decreased back to the same level as 2013. Part of this can be explained through the increase in electricity in vehicles. The total energy consumption of buildings has stayed nearly at the same level during the past seven years. The use of green electricity has almost doubled, whereas the use of standard electricity has decreased. The electricity total also included the use of electric vehicles. The CO<sub>2</sub> emissions, including Scope 1, 2, and 3, have stayed almost at the same level as in 2013. However, it is worth noticing that the company's direct CO<sub>2</sub> emissions (Scope 1) have increased during the years. The data regarding vehicles has not been reported until the years 2014 and 2015. During the last four years, the number of vehicles has increased, including vehicles with alternative driving systems (electric drive, hybrid, liquid biofuels, natural gas, liquefied petroleum gas, bioethanol, and dual fuel). However, the number of vehicles with alternative driving systems remains still relatively low. (DHL 2019b, 105-108.)

The company's future goal is to be a net-zero emission company by 2050. DHL reports that the transportation sector emits 14% of the total carbon emissions globally. DHL's contribution to that is 0.4%. The future's mission includes increasing carbon efficiency by 50% compared to the 2007 level, zero-emission solutions to operate 70% of the company's first and last-mile services, educating and certifying 80% of the employees GoGreen specialists, and join co-operation to plant a million trees each year. The company's other practical steps are increasing electromobility and having more than 50% of the sales from green solutions related activities. DHL's strategy also includes decreasing the use of energy and fossil fuels and increasing the use of alternative drive systems and sustainable fuels. The company enables customers to offset their emissions regarding transportation and logistics. Also, the company develops reverse and waste management logistics to take part in the circular economy. (DHL 2019b, 84-95.)

DHL gathers highly detailed information in its sustainability report, and in most parts, the data is included since 2012 to demonstrate the development. DHL uses ISO certification to ensure engagement in environmental policies. The company briefly acknowledges the Paris Agreement and does not address the climate-neutral EU vision. However, the company has published its vision in line with the EU vision to become a net-zero emission business by 2050. The vision includes approaches mentioned in the seven EU strategies, such as decreasing energy and fossil fuel consumption to contribute to clean, safe & connected mobility. The company is also a major contributor to the circular economy as the demand for reverse logistics increases, and DHL can be the service provider. The company has not been able to reduce the use of fossil fuels yet. Also, the total DHL's CO<sub>2</sub>

emission has only slightly decreased from 2013 until 2019, and their direct emissions have increased. The use of biofuels increased within 2015 and 2016, yet there has been a decrease since. The company has managed to change from standard electricity to green, which currently takes over 80% of the total electricity use. Regarding vehicles, the company has been able to increase the number of vehicles with alternative drive systems. The development of environmental performance has positive highlights and changes regarding electricity and fleet, yet the major issues of CO<sub>2</sub> emissions and fossil fuels are present. As the company itself states, the contribution of DHL to global carbon emissions is 0.4%. The transportation industry creates almost one-fourth of the total GHG's in the EU, making companies in the field highly responsible for emissions and sustainable development. Also, the logistics providers are not responsible for only their emissions, but they contribute to other companies' environmental performance as a major part of their supply chain. DHL's revenue of over 63 billion (DHL 2019a, 1-4) accounts for up to 0.45% of the EU's GDP (Eurostat 2020a). As such a large company, DHL has great influencing power and has responsibility in creating a positive impact with its operations. Overall, the company clearly understands its responsibility and demonstrates transparency and engagement with detailed information and plans. As a large European company operating in the logistics industry, DHL shares great responsibility for sustainable development.

#### 5.2.4 Vattenfall

Vattenfall is one of the leading European energy companies. The company has 19,814 employees. The company's product and service portfolio include production, electricity distribution, sales of electricity, heat, and gas and district heating. Vattenfall provides electricity for 6.9 million customers, heat for 1.9 million customers, electricity networks for 3.3 million customers, and gas for 2.5 million customers. (Vattenfall 2020, 4-7.) Vattenfall's net sales were 166,360 million Swedish kronor in 2019. In euros, the net sales are 16,103 million euros (calculated with the exchange rate on the 26th of October 2020). 24% of the electricity generation of Vattenfall is fossil-based. The rest is based on either hydro, nuclear, wind, or biomass power. (Vattenfall 2019, 89.)

Vattenfall publishes a sustainability report within its annual report. The report follows the Global Reporting Initiative standards (Vattenfall 2019, 73). The company has also been certified according to ISO 14001 environmental management systems and seven of their business units have ISO 50001 energy management systems (Vattenfall 2019, 79). In 2019, the annual report included SDGs of which the six most relevant for Vattenfall are Goal 7: "Affordable and clean energy", Goal 9: "Industry, innovation and infrastructure", Goal 11: "Sustainable cities and communities", Goal 12: Responsible consumption and

production”, Goal 13: “Climate action” and Goal 17: “Partnership for the goals”. (Vattenfall 2019, 19). The company also acknowledges the Paris Agreement and the EU’s climate-neutral strategy as part of market and regulations trends affecting their business (Vattenfall 2019, 27).

The sustainability report includes environmental data regarding production, energy consumption, and emissions. In the Table 3, the CO<sub>2</sub> emissions to the air and electricity generation of Vattenfall within the years of 2013-2019 are presented.

Table 3 Vattenfall Environmental Data 2013-2019 (Vattenfall 2016, 172; Vattenfall 2019, 174)

Vattenfall, Environmental Data 2013-2019							
	2013	2014	2015	2016	2017	2018	2019
CO <sub>2</sub> emissions to air (Scope 1) (Mtonnes)	86,9	82,7	23,9	23,7	23	22,5	18,2
CO <sub>2</sub> emissions (Scope 2) (Mtonnes)				0,1	0,1	0,1	0,1
CO <sub>2</sub> emissions (Scope 3) (Mtonnes)				19,9	19,6	20,7	19
Electricity generation	181,7	172,9	117,4	119	127,3	130,3	129,3
of which hydro power	35,6	34,3	39,5	34,8	35,9	35,5	35,8
of which nuclear power	51,9	49,9	42,2	46,9	51,9	55	53,4
of which fossil power	87,9	82,7	29,2	30,8	31,9	31,6	30,2
of which wind power	3,9 (+ solar)	4,1 (+ solar)	5,8	5,8	7,6	7,8	9,5
of which biomass and waste	2,5	2,4	0,7	0,7	0,4	0,4	0,4

The environmental data of Vattenfall relevant to the research topic includes the CO<sub>2</sub> emissions and electricity generation. The CO<sub>2</sub> emissions include Scope 1, 2, and 3 emissions, yet the Scope 2 and 3 were not reported from 2013-2015. A drastic decrease can be seen in the emissions between 2014 and 2015, where the emissions declined by 58.8 megatonnes. Overall, the CO<sub>2</sub> emissions, including all three Scopes, have also decreased between 2016 and 2019. The electricity generation includes data regarding hydro, nuclear, fossil, wind, biomass, and waste power. In line with the decrease in CO<sub>2</sub> emissions, a sharp decline in fossil power generation can be seen in 2015. The generation of nuclear

and wind power has increased, while the level of hydropower has stayed approximately on the same level. (Vattenfall 2016, 172; Vattenfall 2019, 174.)

Vattenfall aims to secure a fossil-free energy supply and drive decarbonization. Regarding the United Nations SDGs, the company has specific plans for each of the goals. For example, regarding Goal 7, the company states to increase substantially the share of renewable energy by 2030. This will be done by expanding the production capacity and pipeline infrastructure of renewable power. (Vattenfall 2019, 19.) The company states transitioning to the fossil-free living during one generation. They address different milestones in 2020, 2023, 2025, and 2030. In 2030 they aim to eliminate coal from all of their heat operations and reduce emission by 40%. (Vattenfall 2019, 2-3.) The company does not address a specific timeline for becoming carbon neutral. However, the company's targets have been approved by the Science Based Targets initiative to be in line with the Paris Agreement (Vattenfall 2019, 7). Vattenfall's targets include developing solutions for electric vehicles and building the charging infrastructure further. The company communicates its efforts to impact stakeholder groups such as suppliers, partners, and customers to drive the decarbonization. Vattenfall sees collaborating with industry partners to find solutions as a great opportunity. (Vattenfall 2019, 49.) For example, the company collaborates with companies from the steel, cement, and refining sectors to find better alternatives for the carbon-heavy industries (Vattenfall 2019, 2). Vattenfall has also invested in a partnership with the ride-and car-sharing service businesses to improve access to clean mobility and reduce the total amount of vehicles (Vattenfall 2019, 19).

As stated in the EU's climate-neutral vision, the second strategy is based on the decarbonization of energy supply (European Commission 2018, 8-10). Vattenfall, as an energy supplier, plays a crucial role in participating in the strategy. The company already uses biomass to create some of their energy, therefore the company attributes to the bio-economy strategy (European Commission 2018, 13-15). Vattenfall also has the possibility to positively impact the third strategy of sustainable mobility (European Commission 2018, 10-12) by enhancing the charging possibilities for electric vehicles. For example, the United Nations has emphasized the importance of partnership (2015). Vattenfall has shown great examples of the partnership needed in the fight against climate change by combining skills and resources with business partners to find solutions to the issue. The company has been able to share detailed information regarding its own sustainable development milestones and plans, which communicates transparency. The company addresses the European Union's climate-neutral vision and Paris Agreement and has lined its plans accordingly. The company's vision of being fossil-free within one generation does not provide a strict deadline. However, the company has been able to demonstrate a

massive decrease in its CO<sub>2</sub> emissions and generation of fossil-based energy, which communicates strong leadership and engagement towards climate-neutrality. Vattenfall discloses continuous investment towards renewable sources of energy and addresses even closing fossil fuel related plants. As energy industries and fuel combustion represents 54.5% of the total GHG emission in the EU (Eurostat 2020f), the company has major responsibility toward the achievement of the EU's goal. In addition to that, the company does attribute only to its own emissions, yet it has a high impact on other companies' emissions as one of the biggest energy suppliers in the EU.

### 5.2.5 Unilever

Unilever is a company operating in the fast-moving consumer goods (FMCG) industry and its product portfolio includes beauty and hygiene products, food and refreshment, and home care commodities (Unilever 2019a, 1-3). The company's portfolio is large including over 400 brands such as Dove, Knorr, Lipton, and Omo, to mention a few (Unilever 2020a). Unilever's products are sold in more than 190 countries and the company employs 150,000 people. The company's turnover was 52,000 million € in the fiscal year 2019. (Unilever 2019a, 2-3.)

The company provides a "Sustainable Living Report" annually. The company provides a one-page long summary of the performance and report on a 3-year performance summary. The rest of the report can be found on several websites under the Sustainable Living section of the company's website. (Unilever 2020b.) Unilever's environmental framework is based on ISO 14001 standard (Unilever 2020c). In their sustainable living plan, the company mentions 14 different SGDs, of which the environmental are Goal 7: "Affordable and clean energy", Goal 12: "Responsible consumption and production", Goal 13: "Climate action", Goal 14: "Life below water", Goal 15: "Life on land" and Goal 17: "Partnership for the goals" (Unilever 2019b). The company states to advocate policies to advance the goals of the Paris Agreement (Unilever 2020d). Also, the company announces to support the climate-neutral EU vision (Unilever 2020e).

The company provides detailed environmental performance data sheet. The data covers topics of waste and effluents, water, GHGs and energy. Some of the data can be dated back to the year 1995. Data regarding the company's GHG emissions and waste material circularity is presented in the Table 4.

Table 4 Unilever, Environmental Data 2013-2019 (Unilever 2020f)

Unilever, Environmental Data 2013-2019							
	2013	2014	2015	2016	2017	2018	2019
GHG emissions (Scope 1) (tonnes)	1 013 690	929 803	852 672	840 633	793 895	731 927	626 672
GHG emissions (Scope 2)	939 457	920 483	918 301	864 936	895 764	827 091	410 159
GHG emissions (Scope 3)			58 995 720	62 371 042	61 102 138	60 982 508	60 001 655
Waste material reused, recycled and recovered (% total waste)	94%~	95 %	97 %	96 %	97 %	97 %	97 %

According to the environmental data, the company has been able to almost half their Scope 1 and 2 GHG emissions. The Scope 3 emissions have risen slightly from 2015, making the total amount of GHG's produced by the company to rise. The company has been able to maintain high coverage of waste material reuse, recycling and recovering. (Unilever 2020f.)

Unilever is committed to being carbon positive regarding their operation by 2030 (Unilever 2020d). The company's objectives towards sustainable environmental performance include reducing the GHG impact of its products across the lifecycle by 50% by 2030. Unilever aims to carbon positive manufacturing which includes renewable sources of energy, eliminating coal, and benefiting communities with waste energy. The company also aims to reduce water use in agriculture. Unilever overall aims to reduce the amount of packaging and invests in reusable, recyclable, and compostable packaging. (Unilever 2019c.) One of the company's objectives is a deforestation-free supply chain by 2023 by increasing traceability and transparency (Unilever 2020g). The company also provides practical steps regarding their offices such as implementing Leadership in Energy and Environmental Design standard at silver or higher level, optimizing heating and air-conditioning, reducing office energy use and investing in energy efficient devices.

Unilever acknowledges Paris Agreement and the EU vision and has set targets regarding it. The company contributes to the circular economy strategy of the EU. Also, as deforestation is major issue in FMCGs industry, the company takes part in conservation of natural carbon sinks. The future targets of Unilever are ambitious, and the company shares

information regarding major improvements in environmental performance that has already been achieved. The company does not provide customer-friendly sustainability report, as it is divided into separate websites. The sustainability performance sheet, however, provided detailed information from more than 20 years. The improvements are clear as the company has been able to half its Scope 1 and 2 emissions. The company is able to communicate sensitive environmental risks, such as involvement with palm oil and single-use plastic issue. These are overall, a large issue for FMCGs industry and to Unilever as a company. The company states being world's largest single palm oil buyer. Also, the GHG emissions of the company's total value chain are extremely high for a single company. These facts are a heavy burden for a company and brings major responsibility towards more environmentally friendly way of doing business. The company's revenue (Unilever 2019a, 2-3) compared to the GDP of EU (Eurostat 2020a) is 0.37% which indicates that the company has large amount of influencing power. A big leaps towards sustainability have already been achieved and the goal of climate positive business communicates awareness of their environmental impact and the need for improvement. Unilever can contribute largely to the EU's vision with its own action. However, the industry of FMCGs does not largely affect other industries, except in a form of deforestation. Therefore, the company's peer impact is not as high, as compared to for example companies in the energy and transportation industry.

#### 5.2.6 Stora Enso

Stora Enso is a company operating in the bioeconomy. The company develops and produces solutions based on wood and biomass. Their product portfolio includes packaging materials and solutions, biomaterials, wood products, forest, and paper. In 2019, Stora Enso's sales were 10.1 billion euros and they employed 26,000 persons. (Stora Enso 2019a, 2-3.)

Stora Enso's annual report includes a sustainability report, which covers governance, social, environmental, and economic agenda, and data and assurance. The report is constructed according to the Global Reporting Initiative standards of sustainability reporting (Stora Enso 2019b, 7). The company acknowledges United Nations' SDGs and prioritizes the goals 15: "Life on land", 13: "Climate action" and 12: "Responsible consumption and production" the most important for their business (Stora Enso 2019b, 10-11). Also, the company supports the Paris Climate agreement with its GHG emission reduction targets (Stora Enso 2019b, 42).

In the annual report, the company reports specific environmental data of their production units regarding certifications, waste, and fossil CO<sub>2</sub> emissions. Environmental

performance of each unit is categorized. For the purpose of this research, the CO2 emission data is gathered from the years 2013 to 2019 in the Table 5 below.

Table 5 Environmental Data of Stora Enso (Stora Enso 2013, 67; Stora Enso 2014, 65; Stora Enso 2015, 72; Stora Enso 2016, 70; Stora Enso 2017, 70; Stora Enso 2018, 70; Stora Enso 2019b, 70)

Stora Enso, Environmental Data 2013-2019							
	2013	2014	2015	2016	2017	2018	2019
CO2 emissions of production units (direct, indirect, on-site transportation) (Scope 2)	4545967	4448873	3945396	3170959	3329876	3401316	2911720

The table 5 presents the CO2 emissions of Stora Enso's units. The CO2 emissions included are direct, indirect and on-site transportation (Scope 2). The company does not break down the emissions between different Scopes and only presents the total amount. The years 2013 and 2014 does not include on-site transportation. CO2 emissions of the company have decreased steadily from 2013 until 2016, until which the emission started to slightly increase again. However, after 2018, the emission have again been decreasing. Regardless of the lack of the on-site transportation emissions in 2013 and 2014, the company has been able to almost half their emissions from 2013 until 2019. (Stora Enso 2013, 67; Stora Enso 2014, 65; Stora Enso 2015, 72; Stora Enso 2016, 70; Stora Enso 2017, 70; Stora Enso 2018, 70; Stora Enso 2019b, 70.)

Stora Enso's environmental sustainability targets include maintaining high number of process residuals utilization rate, zero significant environmental incidents, decrease the use of water and energy, reduction in CO2 emissions. The company have not stated to strive for total carbon neutrality, yet Stora Enso has plans to reduce fossil GHGs from operations by 31% by 2030, compared to the year 2010 (Stora Enso 2019c). Towards the SDG 12, the company aims to improve responsible consumption and production with their renewable raw materials and sustainable forest management. The wood and fiber-based products can play a key role in substituting fossil-based materials. Therefore, the company is investing in new innovations and research and development. The company supports the Goal 13 by managing the forests and plantations to act as carbon storages. Stora Enso also helps other companies to reduce their carbon footprint by providing sustainable materials. Regarding their own operations, they are keen on reducing the energy intensity of the operations and dependency on fossil fuels. Towards the Goal 15, the company also emphasizes the management of forests to improve the ecosystem and this

includes forest certification and third-party traceability systems. (Stora Enso 2019b, 11-12.) Stora Enso has a goal to reduce energy consumption and the company also already uses renewable energy from biomass, which is created as residue from many of their processes (Stora Enso 2019b, 36-38).

Stora Enso is able to recognize current global issues regarding climate change. The company successfully communicates the Paris Agreement and EU's vision, and understands their responsibility in it. Stora Enso is highly involved with the EU's vision strategies four and six. The fourth strategy focuses on circular economy model, of which the company highly takes part in. The company's raw materials are renewable, recyclable, and fossil free. The sixth strategy focuses on bioeconomy and creation of carbon sinks. Stora Enso states being a bio-economy company and as their main resource is forests – the natural carbon sinks, the company is greatly participating in the strategy. The company has demonstrated successful decrease in CO<sub>2</sub> emissions and is able to transparently communicate detailed environmental performance data regarding each of their units. The company is in a vital position to create new innovations to substitute fossil-fuel based materials. Furthermore, the company can impact other companies' environmental performance as a solution provider. Therefore, it can be concluded, that the company still has high responsibility towards the climate change prevention and EU's vision.

### 5.3 Discussion of the Results

The discussion of the results will cover the results gained from the company data. The section also aims to analyze the division of responsibility between businesses, the EU, national governments, and private households.

Companies, regardless of the size and industry, have a responsibility towards the three aspects of CSR: people, planet, and profit (Księżak & Fischbach 2017, 96). The companies studied for the research provided a high level of acknowledgment towards all 3 P's. The companies were able to communicate issues related to each sector thoroughly and seemed to understand their responsibility as corporations.

The research topic focused on the climate-neutral EU and its background on climate change and the Paris Agreement. The five large companies studied were highly aware of the current environmental issues and climate change. The United Nations SDGs can be considered as today's expected CSR standard. All of the companies acknowledged the goals and highlighted the most relevant for their business. The companies were able to address the Paris Climate Agreement and the EU's vision, with the exception of DHL. All of the companies had their environmental development plans in line with the Paris

Agreement. Three out of five companies had their carbon-neutrality plans in schedule with the EU's timeline of 2050. Vattenfall did not state a clear timeline for their carbon-neutrality, and Stora Enso was the only company not to express total climate-neutrality.

The companies provided throughout environmental performance data. All five companies have compiled data regarding their emissions and other industry-related issues. The companies also were able to show their emissions regarding each Scope, except Stora Enso, which included only Scope 2 emissions. The highlights of the performance data were Unilever and Stora Enso. Unilever presented their environmental figures regarding the last 24 years, which demonstrated a high level of transparency. Stora Enso, on the other hand, shared detailed information regarding each of their production units separately. Overall, the companies were able to measure their environmental performance and disclose it transparently.

The data gathered divided the companies into two: the companies that have already achieved considerable environmental improvements and those who have not. Stora Enso, Unilever, and Vattenfall had already achieved a high reduction in their environmental impact, focusing on GHG emissions. The companies were able to cut their emissions by approximately half compared to 2013. Unilever's Scope 3 emissions were an exception as those increased, yet direct emissions' reduction was massive. Shell and DHL, on the other hand, had their emissions approximately on the same level compared to the year 2013. Shell had been able to decrease the amount of GHGs slightly, yet the amount remained gigantic. DHL's emissions and use of fossil fuels have increased within the years. On the contrary, DHL had been able to change their electricity consumption of buildings to almost entirely to green electricity. As all of the companies emphasized their environmental responsibility, and some did not demonstrate improvement, the possibility of greenwashing and misleading communication arises. Overall, it can be concluded that the results of previous environmental performance varied a lot. The development, or lack of it, did not strictly relate to the industries of companies. While it is true that Shell and DHL operate in heavily fossil fuel related industry. Vattenfall showed an example of a company operating in a fossil-intensive industry that could move away from the fossil fuels. Vattenfall was able to make the change quickly within the years of 2014 and 2015. It is worth mentioning that the companies were studied mostly based on their sustainability reports of 2019. Therefore, the companies' previous sustainability plans were not fully researched, and the previous performance might not reflect the future's improvements.

The companies of the research were from different industries and backgrounds. The environmental issues were highly related to the industries the companies were operating in.

However, the overall approaches to sustainable development were a lot alike. Many of the companies stated to reduce the use of fossil fuels and energy consumption. Also, the increasing consumption of renewables was mentioned by several companies. The investment in natural carbon sinks and offsetting plans were typical. Many companies also seemed to be interested in the development of CCS solutions. Also, companies took approaches suitable for their industries to contribute to circular economy models. Shell and DHL stated their plans to become zero-net emission businesses by 2050. Unilever was the only company striving for being carbon positive, and that already in 2030. Vattenfall aims at fossil-free business within one generation, and as stated earlier, Stora Enso did not state striving for total climate-neutrality. All seven EU strategies towards climate-neutrality were mentioned as part of at least one company's approach. The United Nations (2015) has advised company leaders to set ambitious and long-term goals. The companies of the research were able to do so by presenting multiple long-term plans towards a low carbon future.

Analyzing who has the most responsibility in the possible achievement of the vision is relatively hard. The perception can vary between individuals, businesses, and governments. An all-encompassing truth cannot be presented.

The responsibility of large enterprises has a few particular characteristics. While the number of large enterprises in the EU remains relatively low (0.2%), their impact on total employment and total value added is high (Eurostat 2020d). Thereby the role of large enterprises in society can be considered large. The companies with larger profits have the opportunity to allocate more resources towards responsible activities (Ksiezak & Fischbach 2017, 99-101). The research companies received large revenues, which provides them a vast amount of influencing power within society (Joutsenvirta et al. 2011, 151). The large enterprises of the research also struggled or had been struggling with massive emissions and a large impact on the environment. Therefore, if large enterprises' resources and influencing power were directed towards climate-neutrality initiatives, the positive impact would be high. In addition to these matters, large enterprises in the EU dominate the heavily fossil fuel related industries, according to the total value added (Eurostat 2011, 21). For these reasons, the responsibility of large European enterprises in the climate-neutral vision can be considered significant.

It is clear that a company has the responsibility for its own actions. Yet, it can be debated to what extent the responsibility reaches. As stated, four out of five companies showed their emissions regarding each Scope. This revealed a clear trend. The Scope 3 emissions were, in all of the cases, higher than the company's direct emissions. Many times,

the Scope 3 emissions were several times greater than the Scope 1 and 2. The common perception nowadays is that the companies can be held responsible of their total environmental impact, including upstream and downstream activities (Schrempf-Stirling et al. 2012, 354). This extends the company's responsibility for the activities conducted by other companies and even customers. Studies have shown that most of the misconduct, including environmental violations, occur further in the supply chain (Villena & Gioia 2020). All of the companies seemed to agree with their responsibility throughout the supply chain, as the companies disclosed their emissions regarding each Scope transparently. The companies also covered the whole value chain in their sustainable development plans. Therefore, it can be perceived, that companies do have responsibility for more than their own actions including their whole value chain.

The EU's vision relies most of the responsibility upon businesses and households. Currently, the vision does not include any new set of regulations or environmental laws. The vision's purpose is solely to demonstrate the direction for future's development. The vision contains strategies from which companies can draw inspiration towards their sustainability plans. On behalf of the companies, the vision can be considered too broad as it does not provide actual tools for companies. The EU itself states in the vision that most of the investment needed for the change will be required from private businesses and households (European Commission 2018, 16-19). Therefore, it seems that at least the EU holds companies and individuals most responsible for the achievement of the vision.

Companies' responsibility would not have to be assessed if a new set of regulations would be developed either by the EU or national governments. It would take the decision-making from businesses and individuals to regulative bodies. The regulations would force companies to change their environmental behavior and become climate-neutral. However, this would also be problematic. As the previously mentioned study has shown regarding environmental regulations, the companies operating in highly regulated countries are often taking their emission elsewhere (Itzhak et al. 2019). Despite the fact that the vision includes only the EU, there should be more enforcing regulations that cross the EU's border to avoid such negative impacts.

The allocation of responsibility between national countries and businesses relates to the same issues as with the EU. Almost the only option for countries to take responsibility for the initiative is to create regulations. National countries could also create incentives for companies to engage deeper environmental responsibility. The power of businesses compared to countries has also been researched. As the study focused on large enterprises, their economic power is high. Compared to the GDPs of countries, the corporate sales of

large enterprises show that enterprises often outweigh countries (Belinchón & Moynihan 2018). For example, research showed that one of the research companies, Shell, was bigger than Venezuela. This concluded that corporations often have more power than countries, and therefore their impact on society is also more significant. (Pohl & Tolhurst 2010, 65.) The studies do not demonstrate the whole truth. Yet, it provides a basis for the theory that large enterprises have a major responsibility towards the EU's vision, sometimes even bigger than the nations.

The relationship between businesses and consumers goes two-ways. It can be considered that companies affect customer choices by the products and services they provide. Yet, customers are also sharing a great amount of power as they define the success of companies. As stated earlier, the companies studied for the research took responsibility for their whole value chain. Within the EU, households account for 19.5% of the total amount of emissions (Eurostat 2020g). The rest of the economic activities, causing 81.5% of the total emissions, clearly show that businesses are creating many times greater emissions than individuals. This does not fully take consumers' responsibility away, yet a clear conclusion can be made regarding the impact of business activities versus households.

What needs to be emphasized is the need for partnerships. Many parties, including the United Nations (2015), have strongly recommended companies, both peer and across different industries, to collaborate and co-invest to find solutions to climate change. Some of the research companies communicated collaboration regarding sustainable development, yet a deeper engagement to partnerships would be needed. As the companies of the research operated in different industries, the impact of one to another was clear. The energy supplier affects all other industries as businesses need to change to renewable sources of energy. The logistics industry is a significant part of other industries' supply chain, affecting them with the environmental performance of their services. The oil industry, on the other hand, affects energy and transportation, as a main resource provider and cause for most of the emissions. Companies operating in the forestry affect the overall amount of carbon sinks, which are highly demanded by the other companies to offset their emissions. Also, the bioeconomy can provide solutions to other industries, for example, in a form of renewable materials. The partnership is extremely vital for the achievement of the climate-neutral goal. With one industry lacking behind, it may affect a wide range of industries and, furthermore, the whole vision's outcome.

To sum up the findings, the current environmental impact of businesses in the EU is high. Large companies especially create an enormous amount of emissions within their value chain. It can be reflected in the amount of responsibility they share. The achievement of

climate-neutrality is largely dependent on the companies' sustainable development. The households in the EU account only up to 19.5% of the total emissions (Eurostat 2020g), limiting the responsibility and influencing the power of individual consumers. However, it can be concluded that climate change, as such, is a complex issue. Therefore, not a single party can be appointed with all of the responsibility. Companies have increasingly taken their up- and downstream responsibilities into account and, therefore, are looking for environmental performance improvement regarding the total life-cycle of their products. Only time will tell, whether the EU's vision can be achieved, yet the companies' current ambitious plans would suggest towards it.

## 6 CONCLUSION

### 6.1 Answer to the Research Questions

This chapter provides answers to the research questions. The thesis aimed to assess the responsibility of businesses in the EU's vision of climate-neutrality. The sub-questions will be covered first as they provide more insight and value to the main research question. The sub-questions are followed by the main research question. The answers are presented in the Table 6.

Table 6 Research questions

<p>Sub-question 1: What is the current environmental impact of the companies operating in the EU?</p>	<p>All the economic activities, excluding households, present approximately 80.5% of the total GHG emissions to air in the EU's 27 member countries (Eurostat 2020g). The current environmental impact of the companies is therefore high. There are differences between industries, yet the largest amount of emissions come from sectors such as electricity, gas, steam and air conditioning and manufacturing (Eurostat 2020g). The research did not focus on SMEs, and therefore their current impact on climate change cannot be stated reliably. It is clear, that large enterprises have far-reaching environmental impacts as these companies' emissions are large. Most of the companies studied also operate outside the EU, and therefore their environmental impact does not limit to Europe.</p>
<p>Sub-question 2: Have companies already acknowledged the vision of climate-neutral EU?</p>	<p>The research studied five European companies. Four out of the five acknowledged the EU's vision of climate-neutrality in some form. All of the companies acknowledged the Paris Agreement and based</p>

	<p>their sustainability development more on that. Three out of five companies had planned climate-neutrality in line with the EU's timeline of 2050. Despite that the vision was not published until the end of 2018, the large enterprises in the EU are reasonably well acknowledging the climate-neutral EU by 2050 vision.</p>
<p>Sub-question 3: What kind of approaches and tools companies are using towards achieving the climate-neutrality?</p>	<p>The research companies have taken approaches that are in line with the seven major strategies of the EU vision. The strategies include energy-efficiency, renewable energy, sustainable mobility, circular economy, smart infrastructure, bioeconomy, and CCS solutions (European Commission 2018, 8-15). Each of the approaches was covered at least by one company. However, the most relevant strategies for each company varied between the industries. Companies are striving for better environmental performance, and many of them have set specific goals and deadlines for the improvements. Companies had different types of management tools to measure progress. Monetary funds were directed to actions such as research and development, which could result in innovations and solutions for the crisis. All of the companies had adopted the SDGs of the United Nations to guide their sustainable development. Three out of five companies were using ISO standards as a framework regarding environmental management. Companies stated to decrease the environmental impact of the whole value chain. Practical steps for companies</p>

	<p>were the reduction of fossil fuels and energy consumption. Increase in use of the renewable source of energy and investing in natural carbon sinks and CCS solutions. To sum up the findings, companies of the research have taken multiple suitable approaches for their industry and company. Generally, the companies' practices were comprehensive and seemed to take many parts of the supply chain into account. The approaches were in line with EU strategies, and tools were used accordingly. It is worth mentioning that the companies of research have large resources, and therefore the approaches and tools used by SMEs can be more limited.</p>
<p>Sub-question 4: It is possible to achieve the climate-neutrality goal without companies' voluntary participation?</p>	<p>The EU and NGOs are strongly recommending companies to take greater environmental responsibility. Currently, the EU is not planning on setting new policies to support the vision (European Commission 2018, 3). The participation is, therefore, up to the companies to decide. The environmental impact of business activities is high. Also, the sustainable development of industries affects each other, either negatively or positively. Companies also have a wider impact on society as they can affect customers' choices with the products and services they are providing. Therefore, it is highly unlikely that the climate-neutrality goal would be achieved without a high volume of companies' voluntary participation.</p>
<p>The main research question: What is the role of Corporate Social Responsibility in</p>	<p>In the concepts of CSR, TBL, and sustainability, the company's responsibility is</p>

<p>the climate-neutral European Union by 2050 vision?</p>	<p>divided into three aspects: people, planet, and profit (Elkington 2004; Portney 2015; Książak &amp; Fischbach 2017, 96). This sets a base for the environmental responsibility that companies have overall towards the environment that they operate in. All of these companies operate in Europe, and therefore the responsibility towards the environment of Europe can already be stated.</p> <p>Considering the specific research topic of the EU's climate-neutral vision, the CSR plays a key role. Companies are a fundamental part of society and currently a massive burden for the environment. The business activities result in high volumes of GHG emissions. The EU's strategies require a set of new innovations, which companies are in a position to develop. Also, as stated before, it is highly likely that the goal can be achieved without companies' participation. To conclude, CSR plays a major role in the climate-neutral vision and its success.</p>
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## 6.2 Validity and Reliability

The credibility of the research findings can be analyzed based on reliability, validity, and generalizability. Reliability covers the matter of whether the data collection techniques and analysis are providing consistent findings. The reliability can be analyzed based on whether the same results can be achieved in other settings, and other observers can draw the same observations. (Saunders et al. 2009, 156.) Generalizability is closely related to reliability, and it refers to the extent to which the research results are relevant to another study with another setting or situation (Stokes 2011, 51). The research's validity explains whether the findings are what they seem to be in reality (Saunders et al. 2009, 157).

The study contains multiple limitations, and therefore findings of the study should be used carefully. The first matter affecting the validity and reliability of the research was the size of the research area. The study focused on EU's market area, which contains 27 different countries. The regulations vary between each member country, which affects the local businesses. The local regulations were not taken into consideration. Also, all of the countries were not covered as the samples did not contain a company from each of the countries. Therefore, the study results may vary between the businesses studied related to their country of origin.

Secondly, the limitation that affects the research's validity and reliability the most is the limited sample size. The study focused on large European companies, and the sample size included five of them. The companies were from different industries and backgrounds. However, the market area of the EU is large, containing millions of companies in numerous industries. All of the possible industries were not covered, and the SMEs were left out. Therefore, the study results do not reflect the overall situation of European companies. However, as some similarities were found within the sample companies, the study can be generalized to some extent. Yet, the generalization needs to be done with caution, and the limited sample size kept in mind.

The study relied only on secondary data. The data regarding the sample companies was provided solely by the companies themselves. The reporting methods and overall format of the sustainability reports varied a lot between the companies. Also, companies may have used different methods to calculate and measure their environmental performance. The companies also did not provide data regarding all of the same issues, which affected the possibility of analyzing each company based on the same merits. All of these factors create inconsistency in the data collection and study results, decreasing the reliability of the research outcome.

The research outcome was made based on the author's interpretation of the collected data. The perception might vary regarding the researcher, which also affects the reliability and generalizability of the research.

### 6.3 Suggestions for Further Research

Further research could be conducted with a larger sample size of the companies. The research could include companies from a variety of industries. Companies from the same industries already covered could be studied to gain better generalizability for the study results. As the study focused only on large enterprises, further research could include SMEs

to determine how much the level of acknowledgment and CSR vary between company sizes.

The EU's climate-neutral vision had only been published two years ago, and therefore the company participation can be still limited. The situation is constantly evolving, and more companies are potentially joining to support the vision. The progress of the vision would be interesting to research as years proceed to find out which kind of impact the vision had on companies and which kind of results it caused.

## 7 SUMMARY

The thesis analyzes the Corporate Social Responsibility in the European Union's climate-neutral by 2050 vision. The research focuses on the environmental responsibility of large European enterprises. The current environmental impact of European businesses is studied to understand the share of responsibility the companies hold.

The study consists of two main parts: the theoretical framework and empirical research. The theoretical part of the study covers the economic structure of the EU. Climate change and the background to the topic are researched thoroughly. The Paris Climate Agreement and the IPCC report are introduced, as they have provided the base for the EU's vision. Finally, the theoretical framework provides a comprehensive overview of CSR. The theory studies 3P's of CSR, with the focus on the environmental responsibility of businesses. The drivers for better environmental performance are also studied.

The empirical research focuses on the EU's climate-neutral vision. The empirical study gathers data regarding the strategies the EU has planned within its vision. Shell, DHL, Vattenfall, Unilever, and Stora Enso are covered as examples of large European enterprises. The study focuses on the companies' sustainability reports and their approach to climate-neutrality. The collection of data provides the base for discussion of the results and answers to research questions.

The study reveals that large enterprises do have a large impact on the environment, especially in the form of GHGs. The companies of the research are able to demonstrate responsibility towards all 3 P's. The businesses also understand the inevitable change towards a low-carbon future and have development plans accordingly. Regarding the already achieved sustainability goals, the study divides the companies into two categories. Three companies out of five have already been able to cut their emissions sharply. However, two out of five did not provide proof of improvement. All of the companies had ambitious environmental goals, which are the base for a more sustainable future. If the companies can achieve their goals, the achievement of the EU's vision is more likely.

It is clear that even if companies share a large amount of responsibility towards the world's environmental development, the blame cannot be appointed to only one part of society. Tackling climate change and limiting global warming to 1.5 C requires all parts of society to strive for the same goal. This includes governments, businesses, and individual consumers. Collaboration across the industry and national borders is vital, as climate change threatens the Earth as a one.

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