

# **Navigating and Mapping Sustainability and Greenwashing in Digital Marketing**

A Content Analysis of 50 Companies in Ostrobothnia, Finland

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## DEGREE THESIS

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### Abstract

The purpose of this thesis is to determine how companies in Ostrobothnia, Finland use social media and if they use greenwashing. Further, the companies were categorised by industry to learn what industry is most guilty of using social media to greenwash.

A content analysis of 50 companies has established what social media is used, how often and if greenwashing occurs. Greenwashed posts are also analysed for hashtags, image and emoji use.

As a result, it was found that Facebook and Instagram are the primary social media platforms used by the 50 companies. Energy and Paper/pulp/timber industries were the greatest greenwashing offenders, using greenwashing tactics in half of all social media posts.

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Language: English

Key Words: Social Media, Greenwashing, Sustainability, Ethics, Marketing

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# 1 Introduction

During the last decade of the twentieth century, climate change evolved rapidly from a scientific theory about the future to becoming a primary current concern of environmentalists, politicians, economists, and business leaders (Belz & Peattie, 2012). Daily reminders of climate change come in news articles, weather events, marketing from companies and social media.

Marketing in the 1970's and 1980's revolved around television, radio, newsprint, and industry shows. In the 2020's the focus has changed with companies needing to be seen on every media channel, and changes should and are made to the marketing mix at lightning speed. Social media allows for companies to write their own headlines and skip the step of journalists checking its sources of claims. Social media is able to reach the masses but is not a reliable, regulated source of information and should be treated this way.

As consumers navigate social media posts or scroll through websites for information, what is it that companies are telling them? And is it the truth? Consumers want more clarity and stronger reassurance when something is being sold as green, as a way for the consumer to be able to do their part for the climate. Green products and services should be easy to identify, that contribute to the improvement of society or the environment (Peattie, 1992) however climate deception is a real issue in 2020's. Today it is difficult for consumers to make sense of the many labels on the environmental performance of products, goods, services, and companies (European Commission, 2023). Consumers are also aware that recyclability of a product does not make it a fully sustainable product and more needs to be done.

Firms are adopting more sustainable business practices because of government sanctions, social marketing orientations and pressure from stakeholders. One unintended effect of the attention to green purchasing is that many companies adjust its marketing to position their products as green as possible to get its share of the green pie, even if a "green" message is arguably inappropriate. Companies greenwash their messages in marketing to either intentionally mislead customers, or as a major sign of incompetence.

## **2 Purpose and definition of the research**

The purpose of this content analysis is to discover if companies in Ostrobothnia, Finland, are using sustainability claims in their social media posts, and if they are providing evidence for their sustainability claims or if they are greenwashing. The words, images and colours used by these companies will show to what depth they prioritise marketing sustainability claims and how frequently.

Further, the research will map out what industries are most guilty of greenwashing in Ostrobothnia.

The research questions are as follows:

1. How are companies in Ostrobothnia, Finland presenting sustainability on their websites?
2. Are companies in Ostrobothnia, Finland using greenwashing in social media and what are the characteristics?
3. What industries in Ostrobothnia, Finland are using greenwashing in social media the most?

The initial list of companies was compiled by asking friends and colleagues of what companies they knew in Ostrobothnia that use English in social media. The list was revised multiple times as it was determined for this research that the companies needed to have a website in English, with social media links, and have social media posts in English within the elected 6-month period.

### 3 Structure of the thesis

This thesis has the following elements: Abstract, table of contents, Introduction, Purpose and definition of the research, Theoretical Background, Contribution to new research, Methods and procedures, Content analysis results, Critical examination and discussion, Further research, Conclusion, Ethical Considerations, Acknowledgements and Appendices.

*Abstract* is the summary of the thesis highlighting the main points.

*Table of contents* lists the contents.

*Introduction* presents the topic.

*Purpose and definition of the research* presents the research questions and briefly summarises the research method.

*Theoretical background* defines the key terms, ideas and examples.

*Contribution to new research* outlines what is currently published and what areas that this research will fill.

*Methods and procedures* explain the research method and execution.

*Content analysis results* discusses the statistics and findings of the research.

*Critical examination and discussion* go through the findings and links them to the theoretical background.

*Further research* is a list of possible research based generally around this research.

*Conclusion* of this study finalises the ideas and ends this thesis.

*Ethical Considerations* contains the ethical queries of the author.

*Acknowledgements* lists the important role models, family, and associates.

*References* presents the literature that was used to write this thesis.

*Appendices* presents the list of companies and other appendices.

## **4 Theoretical background**

The theoretical background of this thesis is broad with multiple definitions required. This section will concentrate on what marketing and social media marketing is, what is greenwashing is as well as how to avoid it, and what may cause a company to greenwash its products and/or services. Examples of greenwashing as well as goals and standards are listed last.

### **4.1 Marketing**

The word “marketing” can be traced back at least 400 years, relating to activities that brought buyers and sellers together. It was in the early twentieth century the idea that marketing as an academic discipline and subject for study (Belz & Peattie, 2012). Little has changed from this definition today except the methods in which buyers and sellers are brought together.

Marketing is deeply involved in commercial transactions and without it the buyer would not know what the seller is offering, nor would the seller know what the buyer wants. The twin objectives of marketing are to generate customer satisfaction and profit (Peattie, 1992) for the company.

Further, marketing is a process for defining markets and segments, determining the value propositions to meet the need of these markets and segments and communicating these value propositions to all these people in the organisation responsible for delivering them (McDonald & Dunbar, 2012). This leads on to social media marketing, which could be described as the prominent approach of connecting buyer and sellers in the 2020's.

### **4.2 Social Media Marketing**

Social media is an online means of communication, conveyance, collaboration, and cultivation among interconnected and interdependent networks of people, communities and organisations enhanced by technological capabilities and mobility (Tuten & Solomon, 2015). Companies are right there in the thick of it, communicating its goals, conveying its



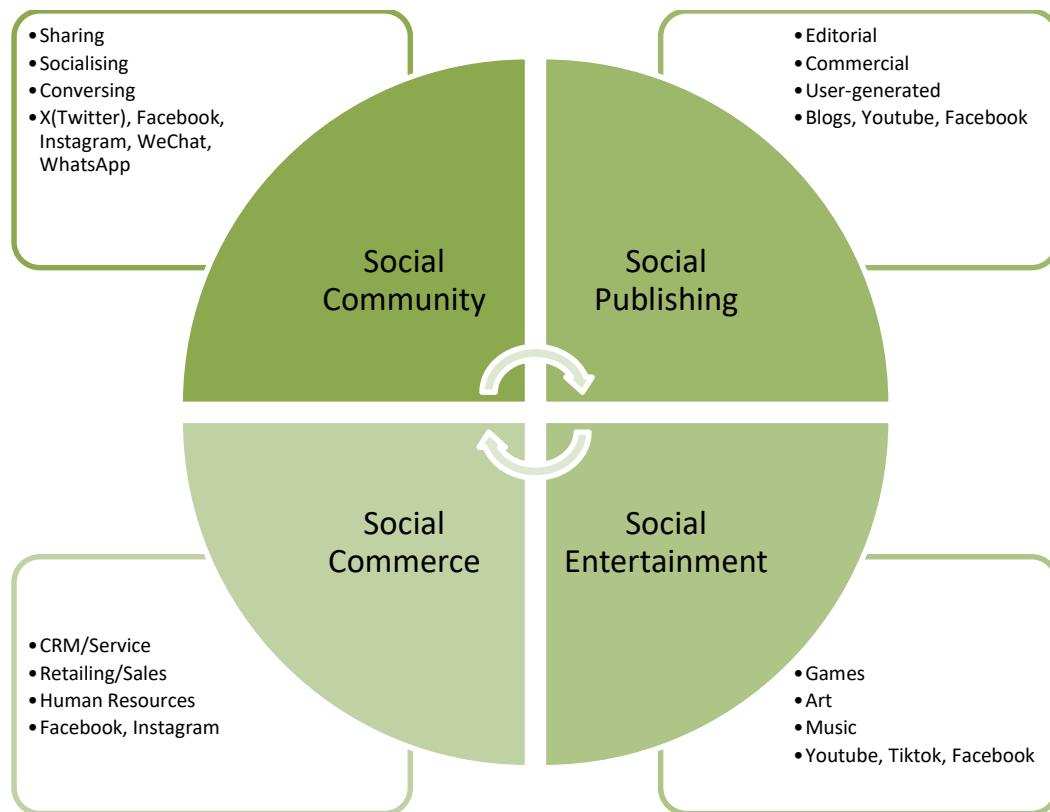
offers and products, collaborating with influencers and sub-suppliers, and cultivating connections with followers and through advertising.

4,9 billion people use social media around the world, logging on to an average of 6-7 different platforms (Forbes, 2023). This shows that companies need to take a broad approach to social media marketing to cover all ground. The five most popular social media sites in 2023 based on active users are Facebook, YouTube, WhatsApp, Instagram and WeChat (Wikipedia, 2023). For the research in this thesis, Facebook, YouTube, and Instagram will be discussed as well as X (formerly known as Twitter) which is ranked 18<sup>th</sup> with 393 million active users (Wikipedia, 2023). Social media is about adding value and content, interacting and engaging consumers who have social media on their phones that are in their pockets and hands most of the time.

The success of a marketing campaign by a company is largely driven by the type of content that is created. Traditional media such as print media, television, radio, and signage has given way to interactive, multimedia marketing that had be released at a faster pace with reduced middlemen, editing and costs.

Social media sites can be categorised into Social Media Zones, with most companies dabbling in Social Community and Social Commerce. Social Community focuses on relationships and common activities, featuring collaborations, multiway conversations, and experiences. Social Commerce is the use of social media to assist in online buying and selling of products and influences the decision making (Tuten & Solomon, 2015).

These Social Media Zones, as shown in Figure 1, focus on different methods of contact and relationship building with potential customers. Social Publishing for example is able to create content for customers and less interaction with them. Blogs and YouTube is a primary tool for Social Publishing with more text and longer video formats. For Social Community, X (formerly known as Twitter), Facebook, and Instagram for example give a greater opportunity for consumers to be able to comment, interact with each other and interact with a company.



**Figure 1: Social Media Zones and example sites (Tuten & Solomon, 2015) (pg. 11)**

For greater interaction with consumers, employees are increasingly being encouraged to become micro-influencers and it is a useful and highly effective strategy for employees to become company advocates and be rewarded accordingly. The cost of using employees as brand advocates would be a fraction of using outsider influencers, which is why there has been a considerable rise in the development of employee advocacy programmes (Glenister, 2021). Outside of this, employees regularly share articles on all social media platforms to promote its work and its efforts, and this is seen in a greater effect on LinkedIn. These employees become the unofficial figureheads of a company, playing a role that they may not necessarily be trained for or understand.

When involving people sometimes something will go wrong and brands are notoriously keen to protect its brand (Glenister, 2021). The role of using employees needs to have structure, training and be managed to protect both the employee and the company. Further, social media influencers, as in people that promote products and services online for a fee or product samples, can affect a company if its opinions do not fully align with a

company. Campaigns can go in the wrong direction and can affect the company and the influencer.

It is far easier for a company to have a regular point of contact on social media to be available to support, communicate and be responsive. Marketing staff should be aware of what is being produced and comment and be interactive and involved to avoid negative attention. Customers become a part of the promotional process through the channel of interactive, online media, where individuals can comment on a product's characteristics online, and creative customers provide companies with an amazing resource of intellectual property (Conaway & Laasch, 2012). Appeasing customers by commenting on its posts and giving feedback is an important role for marketing staff to take.

### **4.3 Role of website marketing when social media dominates**

Websites are a one-way platform that broadcast the goals and objectives of companies and do not allow for responses from the broader public. Websites are still being maintained and produced in 2024 because they give authority and control for businesses. This maintenance may be outsourced and can limit the changes and updates that are made by companies.

While social media enhances online presence for all businesses, it also imposes rigid formatting and design requirements, preventing businesses from creating unique experiences (Zaheer, 2023). Having potential customers visit a website will keep the customer focused on the business without competing distractions, spam, and alternative entertainment as is found on social media platforms. Ordinary business websites do not require unique customers to log in as is done on social media to view the content that is available there. Given this, it is still important in 2024 for businesses to have a frequently updated website available.

### **4.4 Fact checking social media**

The general public has grown increasingly reliant and hooked on social media as a source of news, with 62 % of American adults now getting its daily news from sites such as

Facebook (Clayton, Blair, Busam, & et al., 2019). Fake news on social media has engulfed the world of politics in recent years. The interactive and open nature of social media provides additional opportunities for stakeholders to scrutinize and hold firms accountable for their sustainability performance (Oppong-Tawiah & Webster, 2023).

Disputed tags have been appearing on some social media from December 2016. Facebook used this approach for approximately one year before switching to providing fact-checks in a “Relates Articles” format underneath suspect stories (Clayton, Blair, Busam, & et al., 2019). It is difficult to monitor social media for misinformation, and even more difficult to change a user’s opinion when all the posts they read support what they have previously read. In a consumer survey, 70 % of respondents indicated that it would report a misleading or false claim about how environmentally friendly a product or service is (European Commission, 2022). Parallels can be found in fake news and greenwashing, which will be discussed in the following section, and there is a need for more accurate information to make sustainable decisions. However, fact-checks rarely appear on company posts, instead mainly appearing on “news” posts.

#### **4.5 Sustainability/green marketing**

Sustainability is an organizing principle that aims to meet human development goals while also enabling natural systems to provide necessary natural resources and ecosystem services to humans. The desired result is a society where living conditions and resources meet human needs without undermining the planetary integrity and stability of the natural system (Wikipedia, 2023). Sustainability should be seen as a hierarchy of considerations in which the biophysical boundaries on earth set clear limits within which the achievement of economic and social objectives must remain. (MP Riksdagsmotion, Sverige 2016). Sustainable development is a development that meets today’s needs without compromising the ability of future generations to meet its needs (The Brundtland report 1987).

The green movement has brought the environmental impact of business activity to the top of the global political, social, and business agenda (Peattie, 1992). Green marketing is a style of marketing which has arisen in response to the increasing concern about the state

of the global environment and the life it contains (including human life) (Peattie, 1992). There is a growing awareness that, despite advances in technology and marketing, the potential for increasing the quality of life for society is not being fulfilled.

Re-segmenting the market, evaluating products in terms of its environmental and societal performance, providing information to comply with the new requirements of consumers and regulations, developing a cradle-to-grave picture of the product's green performance, evaluating the green performance of competitors, monitoring the green political and legal agenda for changes (Peattie, 1992). Equating green with true sustainability leads to confusion over the semantics and legitimacy of terms like "environmentally friendlier", "greener" and "more sustainable". Until our economic and legislative systems begin to reflect the true costs of poor environmental performance, it is unrealistic to restrict our definition of green products to those which are sustainable. A more workable definition of a green product is "a product or service whose environmental and societal performance is significantly better than conventional or competitive product offerings" (Peattie, 1992). The marketing should reflect this, without marketers stretching the truth by pushing improved green performance as sustainability.

Communicating sustainability varies widely. Some companies focus on emphasising changing laws and jurisprudence or providing incentives, others emphasize education and changing individual consumption. The "attitude-behaviour" gap is when green attitudes do not always correlate with green consumption behaviours, with explanations such as price, perception of performance, convenience, lack of alternatives, a disbelief of claims and lack of information being offered (Kahle & Gurel-Atay, 2014).

Climate change is unjust, and the world's poorest countries have done the least to contribute to global emissions historically. The poorest countries are also more vulnerable to climate impacts (Stephane Hallegatte, 2022). Colonial countries have long used the workers and resources and profited from them in its home countries.

The big flaw with linear economy is that companies are allowed to externalise the harms of its activities on others, nature, taxpayers, or future generations. Nuclear power-industry is an example with the waste issue being unresolves and now plants being built. If one is

allowed to leave the environment and people in worse condition than it was before, someone else will pay for, or suffer the damage caused.

Sustainability marketing has emerged as a growing megatrend today among small, medium, and large businesses. New marketing concepts address ecological issues such as green or environmental causes and social issues (Conaway & Laasch, 2012) with donations to charities.

#### **4.6 Why go/show sustainable?**

The following list by Peattie (Peattie, 1992) discusses “Why would a company go green?”.

1. It is what customers want
2. It can open new markets
3. It can generate competitive advantage
4. It can save money
5. It can provide insurance
6. It can boost morale
7. Environmental issues can provide major threats as well as opportunities
8. Poor environmental performance can be costly, and will increasingly become illegal

This list, whilst potentially incomplete, outlines many reasons, either given by employees, company management, that a company could promote sustainable products and services. Further, consumers, researchers, suppliers, regulators, pressure groups, the public and the media are all standing on the outside of the company waiting for change.

Sustainability marketing represents an evolution of marketing that blends the mainstream economic and technical perspectives with the emerging concepts of relationship marketing and the social, ethical, environmental, and intergenerational perspective of the sustainable development agenda (Belz & Peattie, 2012). Marketing is the ultimate way for companies

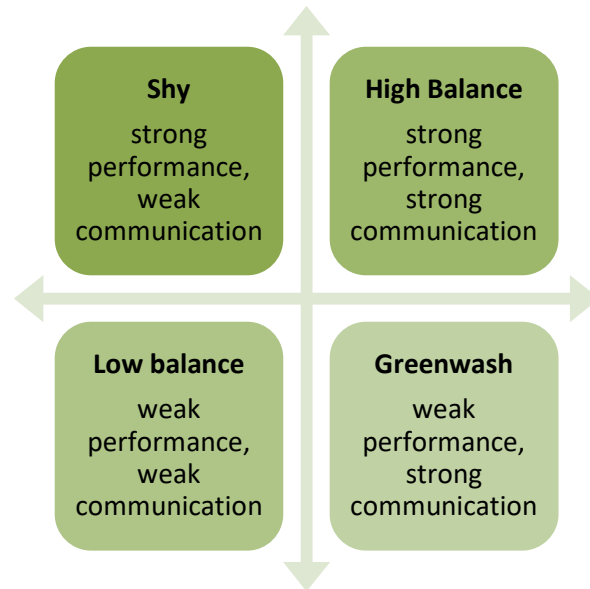
to present their sustainable goals and views and social media is perhaps the easiest way to reach consumers.

#### **4.7 Sustainable or responsible business**

Sustainability is an extension of the environmental movement, which gained public attention on Earth Day 1970 (Lerbringer, 2019). The issue of sustainability has become so important that as of 2005, half of the world's 150 largest companies had a sustainability officer with the rank of vice president or higher (Lerbringer, 2019).

Sustainability involves only using resources at the rate which allows them to be replenished to ensure its long-term survival, and not exceeding the environment's ability to absorb pollution. Sustainable development does not enrich one group of people at the expense of another, it does not reduce the productivity and viability of the world's ecosystems, and it increases people's capacity for self-reliance (Peattie, 1992). A sustainable business is one that has a neutral or even positive environmental footprint, a business that greatest positive value for society, and is economically viable or profitable (Conaway & Laasch, 2012).

A responsible business is a company that has made a credible commitment and taken action to tackle its immediate responsibilities toward a broad set of stakeholders and progressed toward its long-term responsibility to become a sustainable business (Conaway & Laasch, 2012).



**Figure 2: Stakeholder value/effective communication (Conaway & Laasch, 2012) (pg. 23)**

According to Figure 2, establishing goals that have a High Balance with strong performance and strong communication shows a company that on the way to being sustainable. Changing competitive business culture to a greener approach is very easy to talk about but difficult to achieve. Without the full commitment of top management, it is impossible. A green culture will need to emphasise more human oriented values and values of partnership and conservation (Peattie, 1992).

A long-term focus needs to be applied to green solutions in companies. Replacing outdated technologies with green technologies are frequently seen as a necessary but expensive investment.

Sustainability is an open-ended goal for companies to aspire to (Peattie, 1992). Environmentally sustainable consumption encompasses several consumer behaviours, including, but not limited to, buying green products, shopping at green retailers, supporting companies and charities that adopt or promote sustainable practices, adequately recycling products at the end of its life cycle, purchasing organic food, and wisely using energy resources that are based on renewable resources (Kahle & Gurel-Atay, 2014).



## **4.8 Triple Bottom Line, 3BL**

For this content analysis, it will be noted if companies include sustainability reporting on their websites. Looking at the finances of a company is not enough for stakeholders anymore. Companies can represent its values in its reporting with the Triple Bottom Line. This includes:

- Economic responsibility
- Social Responsibility
- Environmental responsibility

This is also known as the 3P's: Profit, People and Planet and where these topics intersect is with sustainable development and is presented along with the financial reporting of a company. Stakeholders want to know how sustainable a company is, and they require performance indicators in the form of a report, including internal, operational, and external benefits (Conaway & Laasch, 2012).

Further, for a company's environmental performance to improve, it must be measured. This is a difficult and novel challenge, for businesses used to thinking in terms of financial and technical performance (Peattie, 1992) which can be viewed in numbers and statistics. Measuring environmental performance can be undertaken by conducting a green audit, setting environmental targets, developing a performance index, developing monitoring, and reporting systems and procedures.

Creating alternatives to financial reporting is a way that companies can present sustainability to its stakeholders, but it is also here that greenwashing can occur. It is hoped however that the information that is presented is correct and can be compared with other companies within the same industry. This reporting is usually presented in the annual report or as a separate sustainability report.

## **4.9 Ethics in marketing**

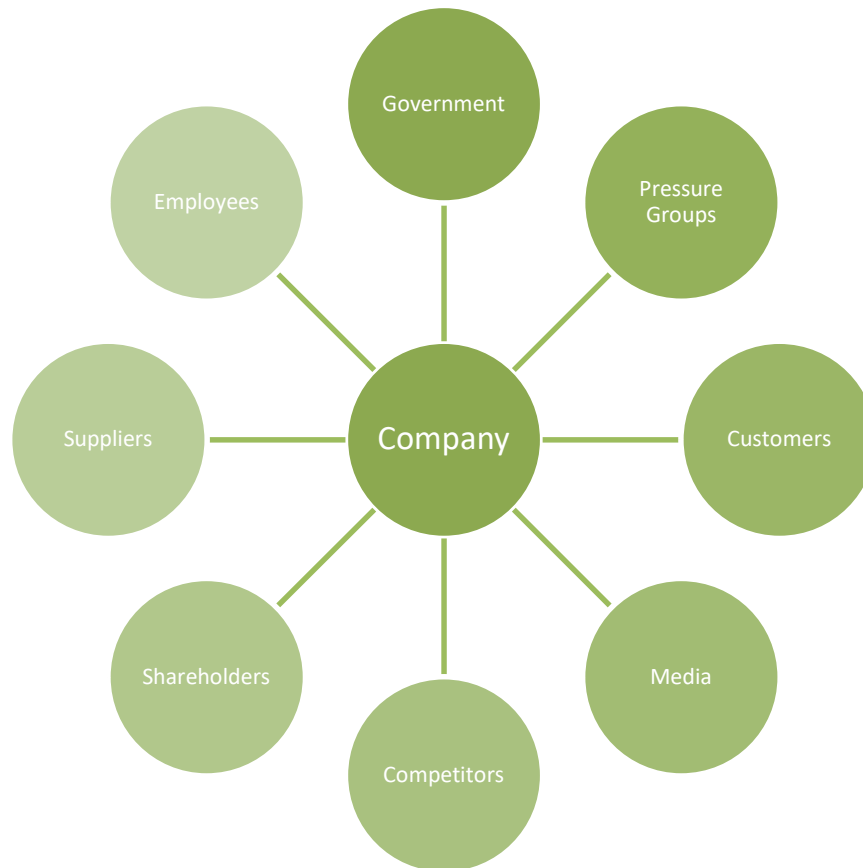
Ethics is "moral principles that control or influence a person's behaviour" (Oxford Learners Dictionaries, 2023). Ethics is a branch of what is called practical philosophy as opposed to

analytical philosophy, the study of right and wrong, making it a highly subjective and controversial area. Closely related to the core business, company morals detail what is worthwhile and important. Marketing messages of the company should mirror the company values. As each department in a company focuses on different things, customers can become confused with the different portrayed goals.

Ethics should play a huge part in every aspect of marketing communication. Further, ethical principles merge with sustainability through marketing and communication (Conaway & Laasch, 2012).

At work, there are great responsibilities for the branding, image, and reputation of the workplace. These may not 100 % align with one's own values, but it is hoped that one would not need to act against one's own ethics every day. Values are those "core beliefs we hold regarding what is right and fair in terms of our actions and our interactions with others" (Conaway & Laasch, 2012). Businesses have an outsized influence on consumer choices.

Corporations are not simply managed in the interests of its owners and shareholders, but that there is a whole range of groups such as customers, employees, suppliers, government, local communities and environmental organisations that have a legitimate interest in the corporation as well (Belz & Peattie, 2012). Each of these groups, as shown in Figure 3: Stakeholder Model, shape the company and its ethics.



**Figure 3: Stakeholder Model (Belz & Peattie, 2012) (pg 34)**

## **4.10 Greenwashing**

The term greenwashing (which conflates “greening” and “whitewash”) was first used by environmentalist Jay Westerveld when objecting to hoteliers’ practice of placing notices in hotel rooms asking guests to reuse towels to “save the environment”. Westerveld noted that there was little else to suggest that the hoteliers were interested in reducing its environmental impacts, and that its interest in washing fewer towels seemed to be motivated by a concern to save costs rather than the environment (Belz & Peattie, 2012).

Greenwashing occurs when a company miscommunicates messages that exaggerates its actual socio-environmental performance (Conaway & Laasch, 2012), when it portrays its environmental performance with unproven or irrelevant claims is open to greenwashing accusations. Some companies check ESG factors and tick the boxes without making any changes. However, actions lead to results.

Consumers have shown in surveys that a lack of reliable information about products' environmental sustainability, reparability and lifespan features among the main obstacles preventing customers from adopting more sustainable consumption behaviours and 86 % would like to receive better information (European Commission, 2022). Claims matter to consumers and companies know this.

The majority of green advertisements in the past thirty years was issued by companies in contrast to associations or advocacy groups, and the content of these advertisements has shifted from focusing on the environmental aspects of products and services to promoting green offerings as a consumer benefit, and accordingly, the goal of green advertising nowadays is primarily to make the consumers feel good about themselves when choosing a green product or service, which leads advertisements to a low level of factual green claim (Naderer, Schmuck, & Matthes, 2017).

Companies exaggerate or completely misrepresent the environmental benefits or "greenness" of their products or services (Wills, 2009). Transparency is the key to a more sustainable future, and greenwashing is bad because it misleads customers, is anti-competitive, works as a smoke screen and blinds consumers to the changes and solutions that are needed. Greenwashing can extend the lifelines of "dirty business" that are inherently incompatible with the goals of the Paris Agreement as companies can misrepresent their contribution to climate change and claim to be doing more than they truly are (Trouwloon, Streck, Chagas, & Martinus, 2023).

Unsubstantiated green claims by unscrupulous manufacturers can undermine legitimate green products and lead to marketplace confusion (Peattie, 1992). The embellishing of environmental efforts/accomplishments/benefits of a company, product, or service to increase sales or reputation. This is dangerous because people who want to reduce its environmental impact may be tricked into purchasing a less environmentally friendly product or service over one that delivers the benefits. This is also dangerous for the companies who do this because it is extremely hard to recover from the damage inflicted on its reputation once customers find out (Wills, 2009). Sustainability and marketing teams need to talk! The label "green" has been used widely and often loosely (Peattie, 1992).

Keywords are used by marketers to send signals to the consumer which recreate a perception that the product and the company are environmentally sound and/or socially acceptable (Peattie, 1992). Hashtags are a way that keywords and buzzwords are highlighted in social media. A hashtag is a metadata tag that is prefaced with hash symbol # and enables cross-referencing of the content by topic or theme (Wikipedia, 2024).

It has been found that an executional greenwashing strategy, using nature-evoking images in advertising, was not deemed as misleading among consumers, but even enhanced its perceptions of the advertised brand's ecological image and led to more favourable brand attitudes than the same advertisement without natural imagery (Naderer, Schmuck, & Matthes, 2017). This finding is striking because it suggests that the simple presence of a nature-evoking image may lead to more positive attitudinal outcomes among consumers than an advertisement without visual cues for the very same product.

53 % of green claims give vague, misleading, or unfounded information and 40 % of claims have no supporting evidence (European Commission, 2023). With evidence, a social media post that at first appears to be greenwashing can be considered a "post with green evidence".

For this research, greenwashing is simplified to "green claims without proper evidence" by the author.

## **4.11 Greenhushing**

Faced with the scenario of greenwashing, many companies are greenhushing instead. Greenhushing is when a company chooses to stay silent on its environmental impact: it omits what it is, how it manages it and what commitments it makes in a context of climate crisis (CE Noticias Financieras, 2023). Reasons for reluctance in reporting green efforts are varied from not fully understanding the importance of sustainability efforts to not having put in any effort at all.

Greenhushing is just as harmful as greenwashing. The omittance of information about commitments and goals can slow down industry wide climate action and cross-sectional

transparency. It also deprives the company of the benefits associated with green reporting and the competitive advantage over non-green companies (Falchi, Gilles, & Naoufel, 2022).

#### **4.12 Artificial intelligence's role in Greenwashing in Social Media**

For this section, ChatGPT 3.5 was promoted in the message box with the following question: What role will Artificial Intelligence (AI) have for role in greenwashing on social media?

ChatGPT responded by answering that AI itself does not engage in greenwashing, it can play a role in both detecting and contributing to the phenomenon on social media and companies may misuse AI to generate content that portrays them as more environmentally friendly than they actually are (ChatGPT 3.5, 2024). It will be seen in the future if this is the case.

AI amplifies disinformation and may already be distorting our ability to recognise greenwashing. In the same way that photoshopping has been used to doctor images for decades, AI applications and computer programs are producing text, images and videos that can deceive and confuse people. Many have already lost trust in what they see on social media. There is potential that this technology will cause more harm than good.

A full view of the ChatGPT text is in Appendix 2.

#### **4.13 Greenwashing examples around the world**

Posts on social media that are viewed in a negative light or are controversial spread quicker than a Rickroll. A study reported that 90 % of unhappy customers will not do business with the company again, with each of these customers sharing the experience with at least nine other people, and 13% share the negative experience with more than 30 people (Tuten & Solomon, 2015). There has been a growth in the last few years in cybertroopers and online trolls, people who solicit a response by creating negative, provocative, and threatening comments (Glenister, 2021).

Some companies have created or been allowed to develop an exaggerated perception of the green performance of its products (Peattie, 1992), and this can lead to backlash if evidence of failure is uncovered. Shareholders might sell its stock, consumers might boycott, and employees might lose work motivation (Conaway & Laasch, 2012).

Misrepresenting the climate impact of its practices or its efforts to address it, greenwashing by companies can deceive consumers, investors and policy makers into unwittingly accepting polluting practices which leads to an overestimation of the amount of climate mitigation action taking place and an underestimation of global carbon emissions (Trouwloon, Streck, Chagas, & Martinus, 2023).

A powerful and direct influence that consumers can have over a company is through the action of a consumer boycott. Boycotts can vary between passive refusal to purchase and consumer, to more active, organised and direct protects against the company (Peattie, 1992).

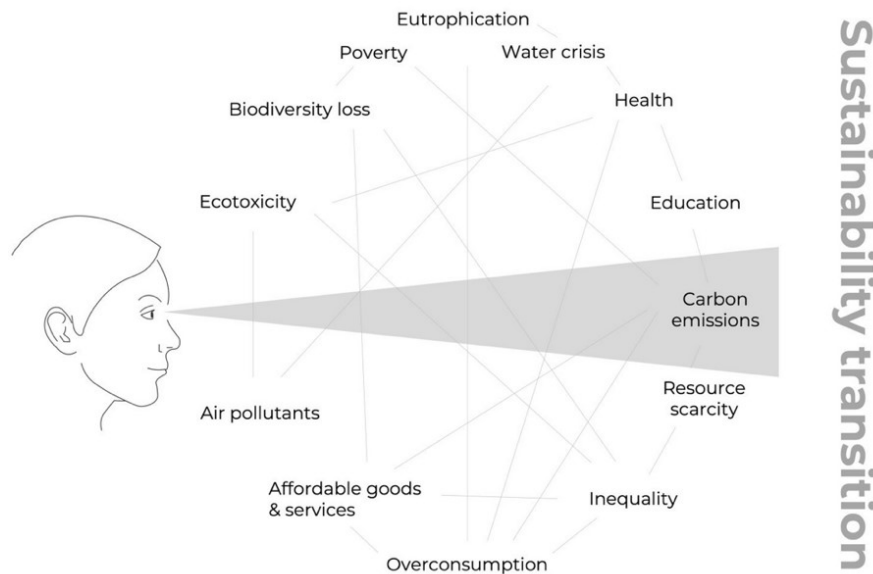
A boycott can be highly economically damaging in the short term and fatal to a company's green image in the longer term (Peattie, 1992), making it unravel like a knitted sweater. A boycott can be responded to in several ways:

1. Ignore the problem
2. Fight
3. Explain
4. Comply

It will have a tremendous negative impact on the reputation of the company that will be very hard to recover from. Furthermore, there are watchdog organisations that can catch greenwashing and even make organizations subject to legal action for making false and misleading claims (Wills, 2009).

Carbon Tunnel Vision is where the goal is to reach "net" zero emissions while ignoring all other sustainable development goals, narrowly focusing and not seeing the whole picture. Companies such as Shell, TotalEnergies and Lundin Energy have begun branding some of

its products as “carbon neutral” by bundling them with carbon offsets (Burton, 2022). Ecotoxicity, poverty, water concerns, health, education, resource scarcity, overconsumption and air pollutants are all being ignored for the current fad of zero emissions. When this fad of zero emissions ends, another will take its place.



Graphic by Jan Konietzko

**Figure 4: Carbon Tunnel Vision (Burton, 2022)**

Companies are increasingly making claims about its current climate efforts and its future mitigation commitments and many are marketing “carbon neutral” products and services rely to a greater or lesser extent on the use of carbon credits generated from voluntary carbon markets to offset corporate emissions (Trouwloon, Streck, Chagas, & Martinus, 2023).

The following examples are to show greenwashing around the world:

#### **4.13.1 Neste cooking oil SAF**

This first example of headline-making greenwashing comes from oil giant Neste. Many reports have come out against Sustainable Aviation Fuel (SAF) which was supposed to be the dawn of “guilt free” flying. Neste was one of the companies involved in the controversy



claiming that its SAF reduces emissions by up to 80 % compared to fossil fuels, as the theory goes that plants used to make the biofuels absorb carbon dioxide as it grows (Reguly, 2023). Neste's SAF is a renewable aviation fuel made from 100 % renewable waste and residue raw materials (Neste, 2024) but it has been linked to deforestation in Indonesia and Malaysia.

#### **4.13.2 Apple's offset plantations**

This second example of greenwashing relates to carbon offsetting. Some Apple Watch models are being marketed as the "first-ever carbon neutral products" by relying on carbon credits. The EU has been clamping down on greenwashing with such messages banned from 2026 (Brown, 2023). The trees that are planned for Paraguay and Brazil are to be planned on formerly deforested areas and are expected to be cut down in a decade to be sold as timber and pulp.

Other concerns about offset plantations occur when climate change causes forest fires, insect attacks or disease threats. Carbon offsetting is difficult to calculate and storing carbon in trees is only temporary as trees die (Welch, 2022). Companies are hiding behind carbon offsetting, promoting small climate remedies as the solution to all the world's environmental problems, and all the while continuing with linear business as usual. These companies continue to greenwash and tell consumers to keep using their products.

#### **4.13.3 Wasaline in Umeå**

Closer to home is the case of Wasaline in Umeå, Sweden. The Swedish Advertising Self-Regulatory Organisation found that advertising by NLC Ferry Ab, the operators of Aurora Botnia/Wasaline was misleading. The statement on the sign claimed in Swedish "Holiday climate-smart with Aurora Botnia: sustainable travel over Kvarken" (Pettersson, 2023).

The ferry uses a combination of fossil gas and marine diesel, which is misleading to call climate-smart (Reklamombudsmannen, 2023). Unspecified claims about positive environmental effects should be proven or not used at all.

The Swedish Advertising Self-Regulatory Organisation went on further to report that expressions such as “environmentally friendly”, “ecological”, “green”, “sustainable”, “climate smart” or other claims that give the effect that a product or service does not affect the environment should only be used if it can be verified (Reklamombudsmannen, 2023).

#### **4.14 Alternatives to greenwashing**

The main alternative to greenwashing is to not greenwash at all, to stay on target. This entails telling it like it is, explaining what the company does and giving concrete examples of its environmental actions without bulking them up with buzzwords. To do no harm, be fair, provide full disclosure, be good stewards, own the problem, be responsible and tell the truth (Lee & Kotler, 2016) in the websites, social media and daily business activities means involving the whole company.

Five guiding communication principles have been suggested for social and environmental business performance messages (Conaway & Laasch, 2012):

1. Adapt to the company's stakeholder audience
2. Provide transparency with messages
3. Be complete with information
4. Assure accuracy in everything that is said
5. Build goodwill with stakeholders

Effective marketing and communication in a business are crucial Corporate Social Responsibility (CSR) activities. The messages that stakeholders and the public receive about CSR determine what it perceives about economic, social, and environmental business performance.

## 4.15 Consumer responsibility

What role do consumers play and how can they affect what companies do? Consumers are increasingly enlightened and aware of environmental issues. The most important source of pressure for better environmental performance is from customers (Peattie, 1992). By applying pressure, the decision for companies to go green has been taken out of their hands and placed in the hands of consumers as well as regulators. There is no longer an option to wait.

Companies can respond in a variety of ways when being pressured into going green (Peattie, 1992) with the following reactions:

1. Head in sand
2. Defensive
3. Lip-service
4. Knee-jerk reactions
5. Piecemeal
6. Green selling
7. Green marketing

Cutting through the clutter of online content is difficult. Every day, consumers are bombarded by more brand messages than they can hope to make sense of, and can turn to influencers to help us cut through this content clutter; to help make sense of what information should be important to use; to help affect action (Glenister, 2021).

It has been suggested that “there is no ‘sustainable consumer’ who is taking social and ecological aspects into account in all fields of consumption, instead consumers tend to engage in sustainable consumption in some aspects of its lives and ignore them in others (Kahle & Gurel-Atay, 2014). It is also difficult to find information about sustainability in some areas and it may be unreliable.

In data from a 2009 Eurobarometer, it was shown that 83% of EU-27 citizens considered a products impact on the environment as important element when deciding which products to buy (European Commission, 2022). Further, studies suggest that the COVID-19 crisis did not dampen the public's awareness of "changing the way we consume", it in fact re-intensified the support for tackling environmental problems (European Commission, 2022).

The real challenge may be to encourage consumers to consume less, and this idea seems contrary to the ideals of marketing (Kahle & Gurel-Atay, 2014).

Green alliances can come about through the supply chain and green attribute can be addressed more effectively. Where government and stakeholder pressure mounts, collaborations become attractive as a means of developing legitimacy and credibility for the entire industry, leading to mutual green marketing solutions to those issues (Kahle & Gurel-Atay, 2014).

#### **4.16 What goals and standards are suggested?**

There are ways to better explain green claims and this can be done with recognisable goals, standards and laws. Customers are not always aware of the distinction between labels governed by third party certification schemes and those based on "self-certifications" i.e. not verified by any third party (European Commission, 2023). The challenge of changing laws, directives and investments is enormous with pressure coming from governments, consumers, lobby groups and more. It is through activity from lower down in the chain that change is forced to occur at a more rapid pace.

There are more than 230 sustainability labels and 100 green energy labels in the EU, with vastly different levels of transparency (European Commission, 2023). Further, codes of conduct represent a tool that guides a company's ethical and sustainable behaviour (Conaway & Laasch, 2012). Consumers would like the label to accurately represent the product sustainability instead of being misled by it.

Rather than frighten companies away from carbon offsetting options, robust governance should provide for high-quality protocols, methodologies, and monitoring frameworks to help companies contribute to climate change mitigation and secure the environmental

integrity of emission reductions through investments in carbon markets (Trouwloon, Streck, Chagas, & Martinus, 2023). Creating a level-playing field for companies should also make consumers feel safer in their choices.

A survey of senior sustainability executives in large multinational companies showed four distinct eco-labelling strategic decisions (Conaway & Laasch, 2012):

1. Companies want to maintain and increase market share with mandated green purchasing guidelines.
2. Companies use eco-labels to increase chances of winning large institutional contacts.
3. Companies believed eco-labels raised the visibility of its sustainability initiatives and strengthened its long-term competitive advantage.
4. Companies use eco-labels for “brand play” picking and choosing the best label to increase brand value.

The following list included some of the goals and standards have been mentioned in literature used to research this thesis:

- European Green Deal
- Global Compact
- United Nations Sustainable Development Goals
- Forest Stewardship Council (FSC) labels
- Marine Stewardship Council (MSC) labels
- Carbon Disclosure Project (CDP)
- Sustainable Accounting Standards Board
- Fairtrade
- Global Reporting Initiative (GRI)

- Sustainability-Integrated Guidelines for Management (SIGMA)
- Partnerships with NGOs
- Dow Jones Sustainability Index
- Finnish Key
- Design from Finland
- EU Ecolabel
- Eco-Management and Audit Scheme (EMAS)
- Sustainability ratings
- Unfair Commercial Practices Directive
- EU Energy Labelling Framework Regulation
- EU Energy Market Directive
- EU Renewable Energy Directive
- EU Car Labelling Directive
- EU Regulation on energy labelling for tyres
- EU Product and Organization Environmental Footprint
- EU New Circular Economy Action Plan
- EU New Consumer Agenda
- EU Green Deal Industrial Plan

The total list is long, diffuse and potentially expensive for any company that would consider voluntarily applying these to its products and services. The proliferation of sustainability labels and logos was identified as an important and persistent problem across the EU block (European Commission, 2023) as shown in part by the list above.

## 5 Contribution to new research

The majority of previous research discusses how CSR helps greenwash a company's image and cover up its negative practices (Atta-Panin, 2014), sustainable attitudes of Finnish consumers (Khanh, 2020) as well as many highlighting and presenting greenwashing as a well-used and increasing phenomenon.

In a book section by Naderer, Schmuck and Matthes (2017) research show that individuals are greatly influenced by nature imagery in green marketing and when confronted by this, consumers are unable to recognise misleading intentions due to the emotional appeal of nature. Further, to avoid misinformation it is recommended that advertisers increase factual claims and provide detailed information. Finally, it was proposed that stricter advertising regulations and transparent information practices be implemented to stop greenwashing.

In a European Commission study, it was shown that 80% of web shops, webpages and advertisements surveyed contained green claims, 45% were implicit claims (imagery and colours), 35% were explicit claims (logos, labels, and text) and 21% were vague claims (European Commission, 2022). Given these figures, it is clearly occurring in the EU, also in Finland. Further, the study reported that most stakeholders for the assessment agreed that greenwashing is a problem, with the noticeable exception of industry representatives (European Commission, 2022). This shows that those producing the claims are either unaware of the concern or are deliberately creating them to greenwash.

In a journal article by Oppong-Tawiah and Webster (2023) linguistic cues in a sample of tweets on X (formerly known as Twitter) in highly polluting industries were researched with regards to being fake, exaggerated, selective and deceptive. Non-linguistic clues such as audio and visual clues require sophisticated analysis.

The research in this thesis will help to shine a light on the nature of greenwashing claims in social media as well as the greenwashing practices of companies with operations in the geographical location of Ostrobothnia. It will also pinpoint what industries are the most guilty of greenwashing.

## 6 Methods and procedures

### 6.1 Content analysis of websites and SOME

This research is a content analysis of websites and social media greenwashing. A content analysis is observational, looking at and identifying characteristics in messages, in this case primarily social media posts as well as associated websites. Content analysis is based on a systematic examination of the whole set of empirical data, inspecting for recurrent instances such as words, themes, or discourses (Eriksson & Kovalainen, 2008).

Further, content analysis can be defined as a systematic, objective, quantitative analysis of message characteristics (Neuendorf, 2017), in this case human-coded from digital marketing.

It will be conceptual, to determine if the messages use language and images to infer green credentials. The companies selected will not be contacted and no staff will be interviewed.

The companies selected for this content analysis have been compiled randomly. Some of the companies were added to the list after seeing signage around Ostrobothnia some others from brainstorming with friends. The list of the companies is included in Appendix A: List of companies.

The initial list of companies included approximately 100 companies. To be included in the final list of companies for the content analysis the companies needed to:

1. Be located in Ostrobothnia
2. Have websites in English
3. Have social media links in the company website
4. Have social media in English

The company websites have been searched for on Microsoft Edge browser using the Google search engine, using the business name in the search field along with Finland. For example,



to search for the company website the following would be typed into the search field: "Company X Finland".

When looking at social media links for each company, only the links provided on the English website have been used. Searching on the social media platforms for companies may unearth unofficial accounts. Where posts were written in another language than English, these have been ignored, e.g. ABB's Facebook pages had a combination of Finnish and English posts, and for this research only the English posts have been included.

Several of the companies are foreign owned companies, with the offices/factories located in Ostrobothnia. These have been included in the research as they are important employers, sub-suppliers, sports team sponsors and a window to society in Ostrobothnia.

A few minutes were used per company to find the following information on the company website:

1. A short explanation of the company
2. Sustainability claims
3. Private or public company listing information
4. Social media accounts linked to the website

The industry to which the company has been allocated for this research has been done so based on the text on the company website, brainstorming, Google and Wikipedia searches and social media portrayal. Further, participating companies in EnergyWeek (EnergyWeek, 2024) were mainly allocated to the Energy group rather than Manufacturing or Consultancy.

The industries are as follows:

- Consultancy
- Consumer products
- Culture

- Earthworks
- Education
- Energy
- Hospitality/Food
- Logistics
- Manufacturing
- Marine Manufacturing
- Paper/pump/timber
- Software

For this research, only a few minutes and a quick scan of the main page and indexes is to be taken. This is limited to reflect someone surfing the internet, with some sources reporting 3 to 5 minutes spent on a website where the information is valid, others reporting 1 minute 26 seconds (Databox, 2021).

After the list of 50 companies in Ostrobothnia was completed, X (formerly known as Twitter), Facebook, Instagram, and YouTube accounts linked to the websites were viewed. The company list was worked through in alphabetical order.

Each post in English was viewed in reverse chronological order from 31<sup>st</sup> December 2023 to 1<sup>st</sup> July 2023. The reason this was done in reverse order is due to the nature of social media, with the most recent post being shown first.

For each social media post the following things were noted:

1. Date (Date)
2. If the post could be considered as to include sustainability claims (Green)
3. What sustainability/greenwashing text was used (Text)

4. What sustainability/greenwashing images and emojis were used (Images)
5. If any evidence of the sustainability claims could be found within 2 clicks (Evidence)

Navigating away from a social media post is done by clicking on a hyperlink in the post and in this research two navigation clicks are allowed to find the information, simplified to “2 clicks”. By limiting the number of navigation clicks, it should imitate how a social media user may navigate when using social media. A post was considered greenwashing if there was no evidence of the sustainability claims and if words and phrases were used that would imply, refer or allude to sustainability being used.

Words such as future, energy, global, responsible, economy, whole and neutral were not considered greenwashing as individual words, only when combined with “greenwash” words.

Examples of actual words and phrases found in this research are listed below in alphabetical order:

- Carbon capture
- Carbon neutral
- carbon-neutral heavy transport
- Choose a sustainable career
- Clean and renewable fuel
- Clean tech
- CO2 neutral headquarters
- Decarbonised
- Easy to recycle
- Emission reductions
- Fight climate change
- Global climate goals
- Green data
- Green energy
- Green growth
- Green hydrogen
- Green solutions
- Green technologies
- Low carbon society
- Low energy footprint

- Meet emissions reduction targets
- Sustainable future
- Reduce emissions
- Triple renewable electricity capacity
- Sustainable electric transportation
- Zero emissions supermarket

If a post had evidence, or a hyperlink that could provide evidence within two clicks it was recorded in the evidence column.

If a post did not have text that could be considered as greenwashing the image was ignored as image interpretations in this content analysis would require a higher level of interpretation. Still, including background imagery or icons into the analysis makes it possible to conduct a more nuanced interpretation of the advertisement, which is why the coding of visuals in future content analyses is warranted (Naderer, Schmuck, & Matthes, 2017).

If a post did have text that could be considered as greenwashing, the image was analysed. If the image could be considered as greenwashing a short text was noted down. If the image did not appear to be greenwashing nothing was noted. Greenwashing in images could include green backgrounds and images of nature or people in nature.

Emojis are symbols that are used in text. Greenwashing emojis could be green hearts, trees, suns, leaves etc. These were compiled in the image column. Emojis alone do not constitute greenwashing.

This procedure was repeated for all social media posts and companies in this research and an example of this procedure follows.

### **6.1.1 Example of content analysis procedure**

This example comes from Vestas, a company specialising in wind power technology. It is a Danish company with the Finnish head office located in Vaasa. It has been allocated to the Energy industry. Five social media posts are included in the chart below from their X (formerly known as Twitter) account for the reader.

Date	Green	Text	Images	Evidence
27.12.2023				
20.12.2023	x	#renewableenergy	windfarm at sea, globe emoji	
22.12.2023				
19.12.2023	x	deliver clean, affordable and secure energy		
13.12.2023	x	#climate action, peak emissions #3xrenewables, climate goals	wind farm at sunset, globe emoji	

**Figure 5: An example of recording social media posts for Vestas for this research**

27.12.2023 tweet had no sustainability claims so only the date was recorded.

The 20.12.2023 tweet is shown in Figure 6 below. This example was marked as a sustainable claim as #RenewableEnergy was included in the text. “Renewable” is a word that is synonymous sustainability. The image is simplified to “windfarm at sea” and there is a globe emoji. No sustainability evidence was available.

The link in the post redirects to the Vestas home page and in the press release “Vestas and Vattenfall sign 1.4 GW preferred supplier agreement for UK offshore wind project and exclusivity agreements for 2.8 GW for two other UK projects” there are no further green claims or explanations. The text in short discusses the agreements that Vattenfall and Vestas have come to. Therefore, the post did not have evidence to support the green claims as seen in the Figure 5 example and is therefore considered as greenwashing



**Figure 6: Vestas social media post on X (formerly known as Twitter) 20.12.2023.**

For the data example in Figure 5, none of the sustainability/green claims had any evidence to support the claims and are therefore the 3 posts that are marked as having sustainability claims are greenwashed.

## 6.2 Exclusions and research notes

There are a number of exclusions that should be noted in this research.

Only the original post has been recorded. Retweets and shares from other social media users were not included. Comments by followers have not been included in the research, however amusing or disturbing. Also, the number of readers of each post has not been collected due to the nature of bots and fake accounts.

From preliminary observations of the websites, the certificates and labels were sometimes prominently displayed, sometimes hidden, often only at the very bottom of the website. The certificates and labels that the companies show on their websites however have not been recorded.

So called “Stories” in Facebook and Instagram have not been recorded due to the nature of “Stories”. These only visible for 24 hours unless saved in a different area of the page. Shorts in YouTube were not planned to be recorded; however, it was found that none of the companies used YouTube Shorts.

Numerous companies that were originally planned to be included in the research, did not include their social media account links on their company websites, either by neglecting it, having used preformatted websites or the links may have disappeared when the social media companies have changed the formatting for the Buttons. Some companies that have done this include Dermosil, Korv Görans Streetfood, Creamarketing, Petsmo Products and Mapromec. These companies have had its website produced by different marketing companies, as can often be seen at the bottom of the website.

Some companies have monetized their YouTube videos with a variety of associated advertising included. This was not recorded in the research but could indicate that companies are profiting from YouTube videos. If the content were to be greenwashing, even profit from it.

YouTube videos longer than 5 minutes were viewed for the first five minutes, then played at a faster speed. This was to save time for the researcher but could be argued that a regular viewer would not have watched the video in full either. Many of the videos that

were longer than 5 minutes were not a typical creation of a marketing campaign. They were instead information for shareholders and financial in nature, or interviews with senior staff or board members.

As the companies have been chosen to have offices in Ostrobothnia, it is possible that the office is part of a larger group that has social media managed outside of Ostrobothnia. Individual companies have not been contacted as to where its social media is managed.

Several companies included in the research “dropped off” social media during 2023, e.g. Kemira, Cyient for part or all of the year with no explanation available in the posts. It can be speculated that their social media accounts were neglected, a change in parent company, deletion, or a change in social media marketing design could be one of the reasons. There was no immediate information in news media or on the company websites to explain these events. The available posts from these companies were included in research.



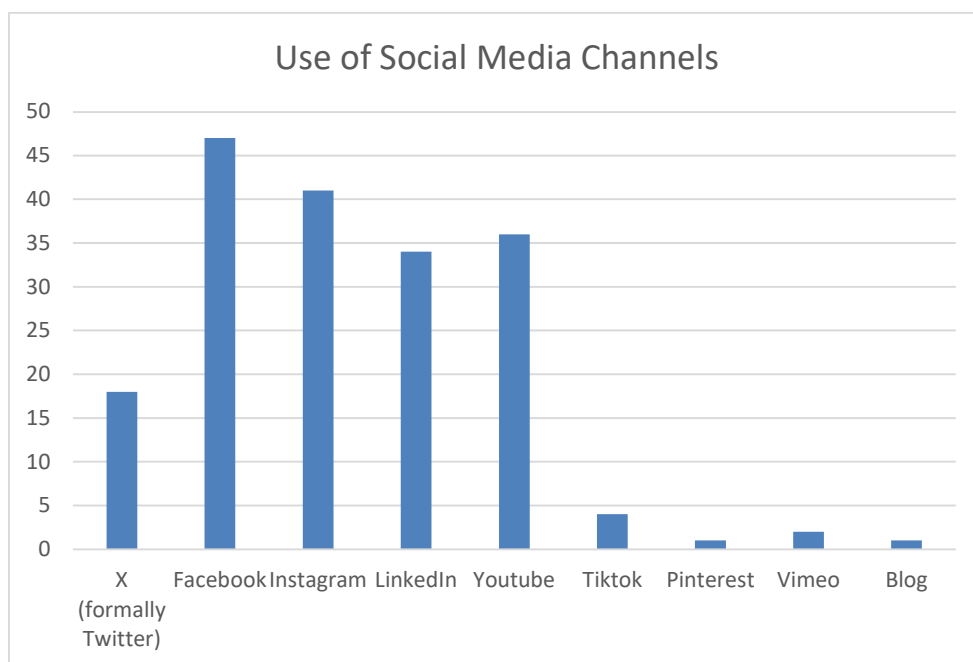
## 7 Content analysis results

The company data list for the 50 companies was completed in December 2023. The companies are listed in Appendix A: List of companies, in alphabetical order by name, with a short text, allocated industry and website included.

29 out of 50 companies included sustainability claims, reports, or commentary on their English websites. 13 out of 50 companies, mainly those that were publicly listed, included sustainability reporting on their websites, either in the form of a separate sustainability report or as part of the annual report.

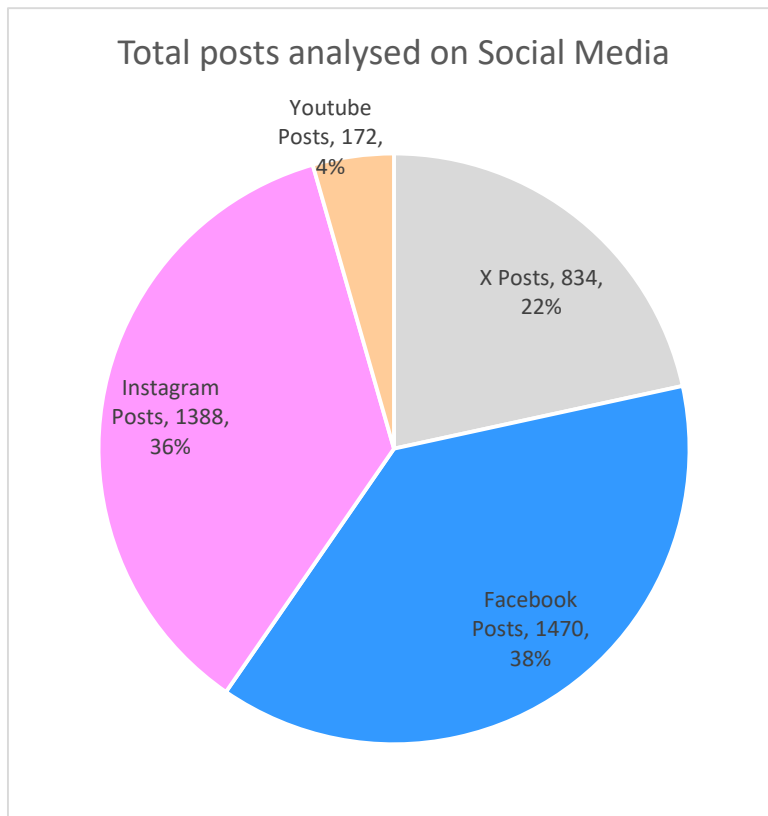
The mix of social media that was used by the companies varied, however the majority used Facebook (47/50), Instagram (41/50) and YouTube (36/50). This can be viewed in Figure 7. The fourth most used social media was LinkedIn (34/50) however LinkedIn is a business and employment-focused social media platform with less emphasis on customer contact. For this reason, LinkedIn was not included in the research. X (formally known as Twitter) was included in the research and was in fifth place (18/50).

TikTok (4/50), Pinterest (1/50), Vimeo (2/50) and Blogs (1/50) were the other social media platforms that were found to be used by a few of the 50 companies in the research.



**Figure 7: Use of social media platforms by the companies in this research**

The content analysis was completed from December 2023 to March 2024 for the last 6 months of 2023. 50 companies from Ostrobothnia were included in the analysis with a total of 3 864 social media posts recorded and analysed. The greatest number of social media posts were made on Facebook (1470 posts) and Instagram (1388 posts) as can be seen in Figure 8.

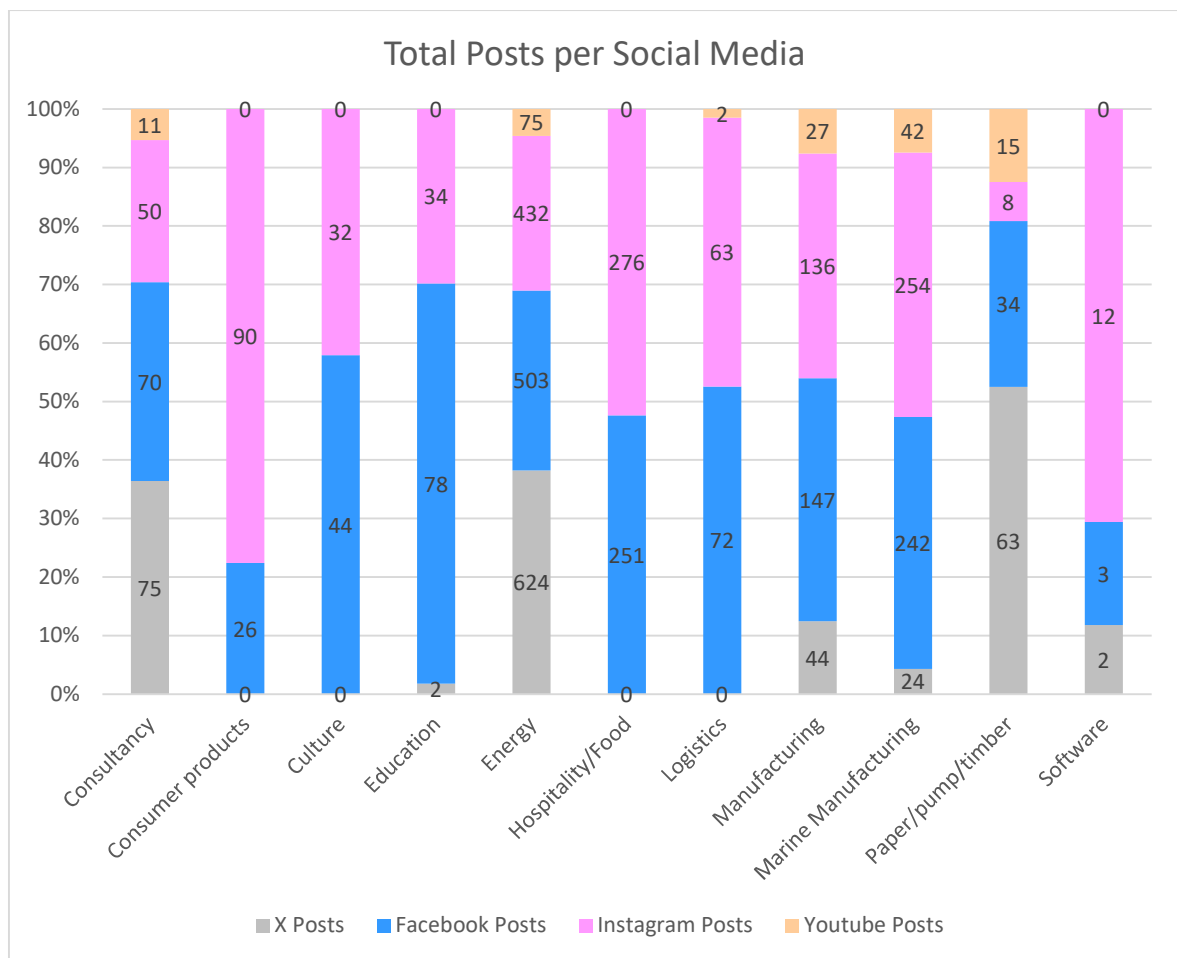


**Figure 8: Total posts analysed per social media platform**

From this data it is shown that on average a company posted at a rate of 3 social media posts per week.

Of the companies that were analysed, 9 are in the Energy industry. However, it accounted for 42 % (1634/3864) of the social media posts, with energy companies averaging 1 post per day per company. One of the energy companies had 516 posts across all four of the social media platforms in this research in the 183 days (including Saturdays and Sundays) of this research, a rate of 2.8 posts per day, almost 20 posts for a 7-day long week.

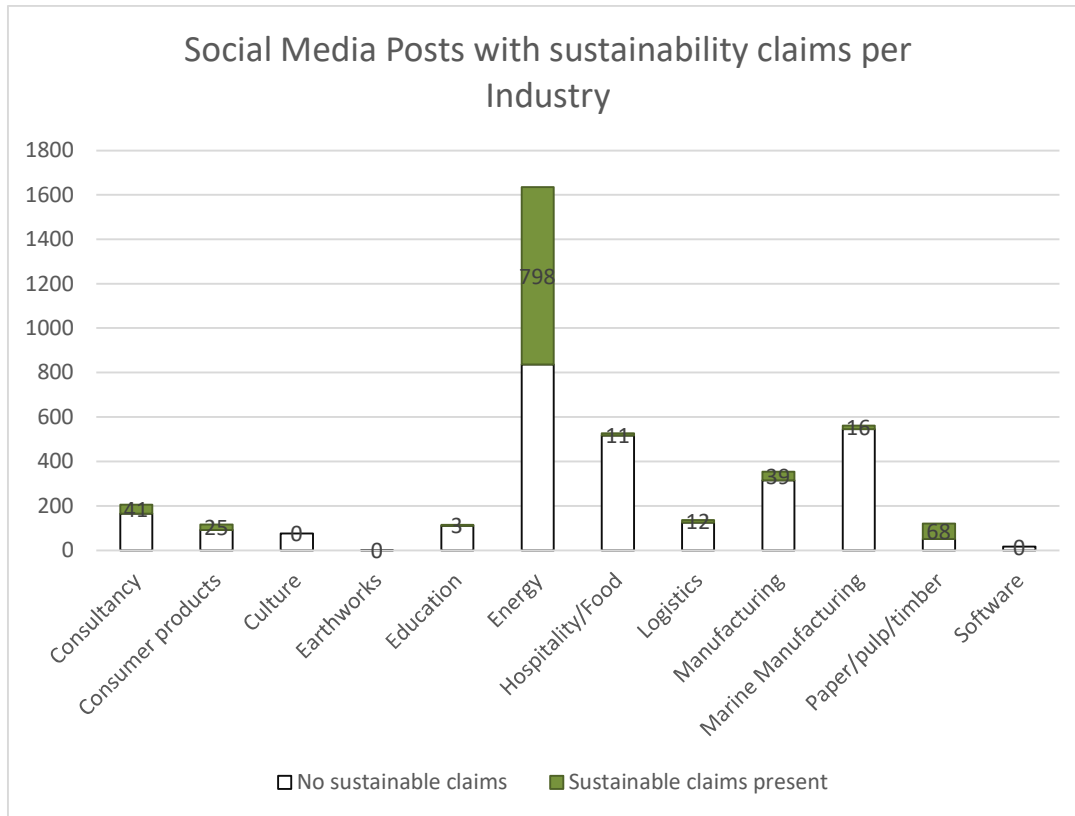
Companies not included in the energy industry posted the remaining 58 % (2110/3864) social media posts, at a rate of 0.26 posts a day, or approximately one post every 4 days.



**Figure 9: Breakdown of posts per social media platform and industry.**

Consumer products, Culture, Education, Hospitality/Food and Logistics used Facebook and Instagram for posting on social media as can be seen in Figure 9. The majority of these companies are in direct contact with the consumer/user of the products, compared to many of the Consultancy, Manufacturing and Energy companies that are in contact with suppliers, government agency and investors.

It was observed that companies posted news, profiles of staff, product promotion, open employment positions, and seasonal greetings.

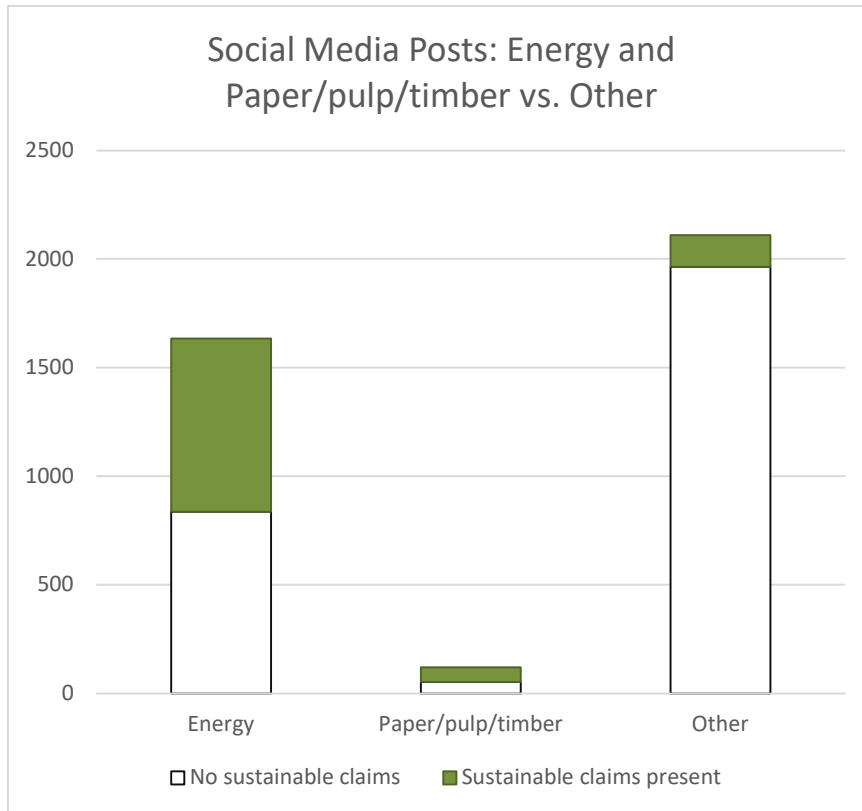


**Figure 10: Total Social Media Posts with sustainability claims per industry.**

Of the total 3864 posts that were included in this research, 1013 include sustainability claims, approximately 26 %. Figure 10 shows a visual of the total posts by industry with sustainability claims, coloured in green. Of the social media posts that were recorded, the following industries had the highest percentage of the social media posts as being analysed as containing sustainable claims:

- Paper/pulp/timber (56.6%)
- Energy (48.8%)

There is no evidence that the companies in the Energy and Paper/pulp/Timber industries are following similar marketing strategies despite having almost parallel statistics.



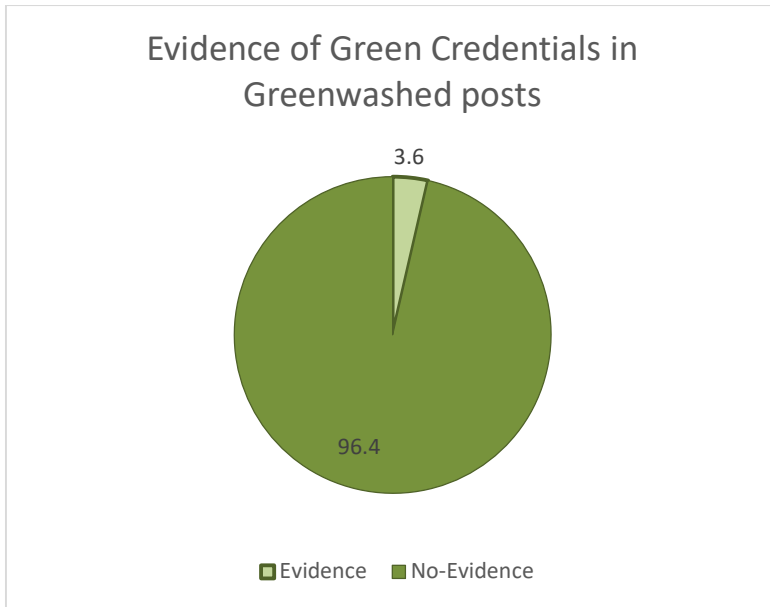
**Figure 11: Breakdown of total sustainable claims present and no sustainable claims in social media posts of Energy and Paper/pulp/timber industries.**

With these two industries removed from the data, the posts with sustainable claims were down to less than 7 % as can be seen in Figure 11. Education, Hospitality/Food, Logistics, Marine Manufacturing industries all had less than 10% of the posts being analysed as having sustainable claims. Culture, Earthworks and Software had no posts with sustainable claims.

The greatest surprise during the analysis was that the Marine Manufacturing had very low numbers of posts with sustainable claims, only 2.8 %. As a sidenote, the Marine Manufacturing companies showed images of its products in use in the majority of their social media posts, as in boats in natural surroundings, but did not use text to greenwash.

A total of 3.6% (36/1013) social media posts with sustainable claims provided some sort of evidence of its green credentials or statistics within 2 clicks, thus deeming the remainder of these posts to being greenwashed, a total of 96.4 %. This can be seen in Figure 12 below. When a link was included in the post supporting evidence was read. This information was

often an inflated version of the social media post sustainability claims without any evidence.



**Figure 12: Percentage of evidence in greenwashed social media posts.**

Of the 3.6 % of the social media posts that provided evidence, many of the hyperlinks included an indication of labels, awards, or standards.

One example of evidence being provided was by UPM on X (formerly known as Twitter), 21<sup>st</sup> November 2023. UPM announced a collaboration with a sportswear company to produce the “first ever fleece jacket with wood-based polyester” and “30 % renewable materials”. The link included on the post opens in the UPM homepage, where a longer article is included. The article raises many questions but does provide evidence of the sustainability claims in the X (formerly known as Twitter) post (UPM, 2023).

In the greenwashed posts, the use of greenwashed hashtags was greater than expected. 58 % of the greenwashed posts included hashtags. There was no great surprise as to which words were used in the hashtags, with #sustainability being the outright favourite. There were 199 unique greenwashed hashtags used a total of 914 times. Many of the greenwashed posts had multiple greenwashed hashtags included. A breakdown of the words can be seen in the treemap in Figure 13 below.

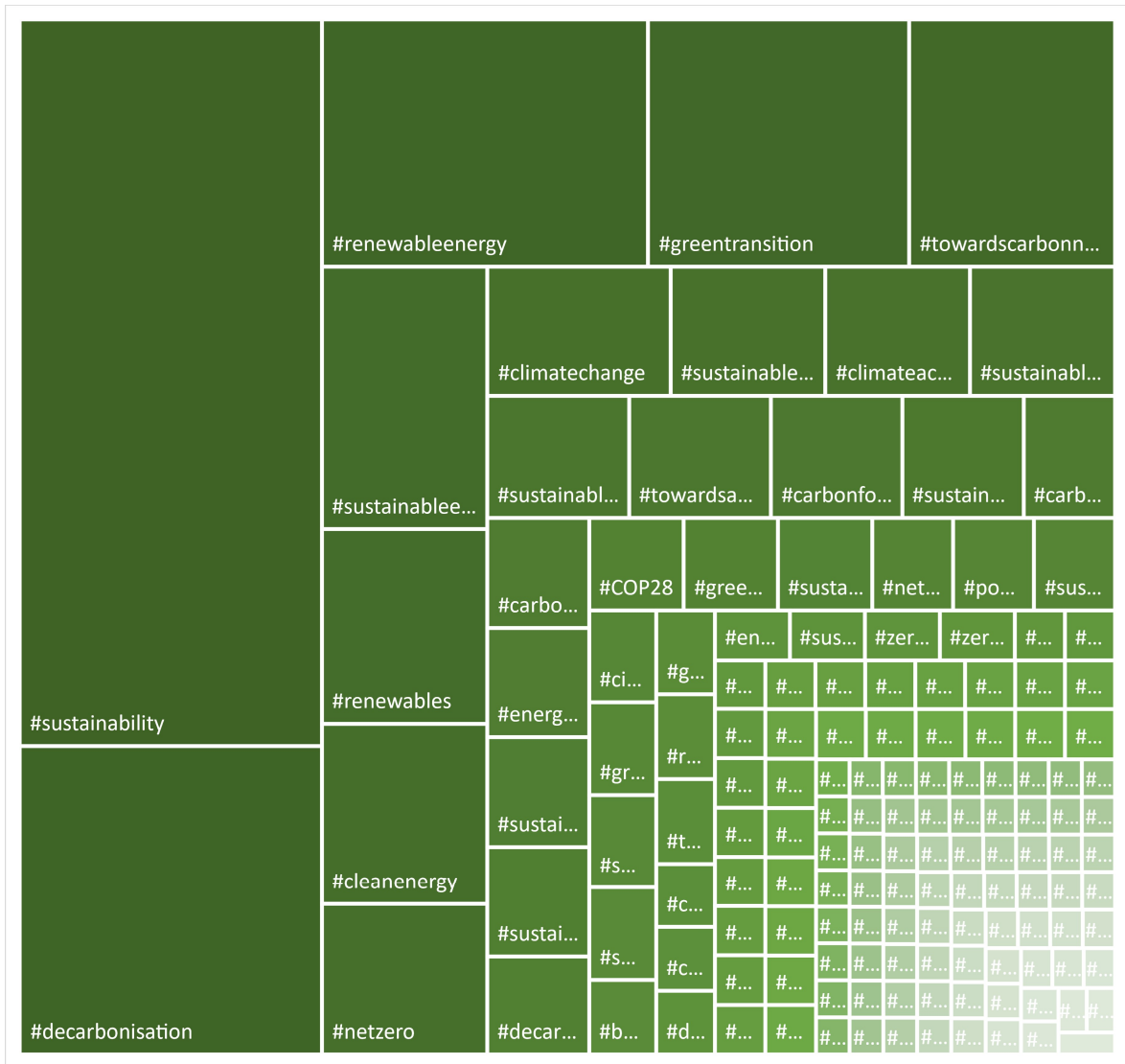


Figure 13: Treemap chart to visualize hashtags used in all greenwashed posts.

Hashtags may be part of the social media marketing strategy, with some companies having a variety of hashtags used. Campaigns may have also been running when specific hashtags were used by a company. After collating the greenwashed hashtags used by each company, it could be seen that each company that used hashtags had a favourite in alphabetical order:

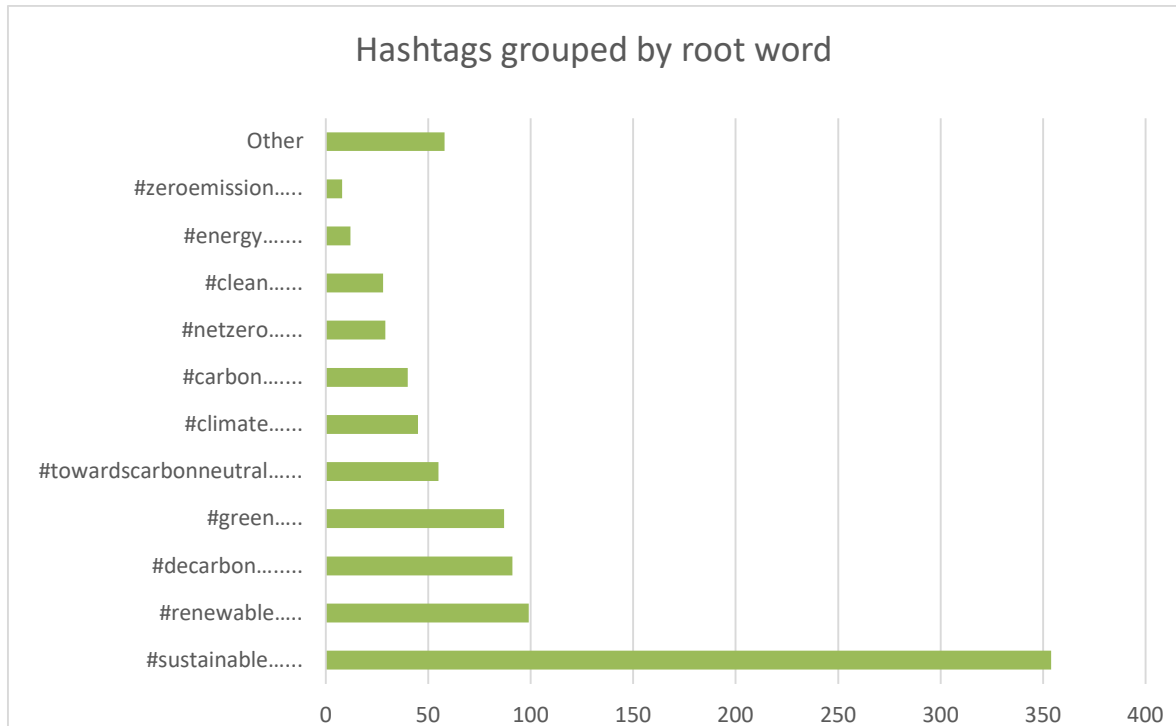
- #beyondfossils
- #decarbonisaton
- #decarbonised

- #forasustainableeveryday
- #greeninitiatives
- #greenskills
- #greentransiton
- #netzero
- #renewableenergy
- #sustainability
- #sustainabledesign
- #sustainableengineering

It may be possible to guess the company by the hashtag, as some companies have aggressively used these hashtags across social media marketing and beyond.

In Figure 14, the greenwashing hashtags used in the posts have been placed into categories, based on the root word, with #sustainable....., #renewable....., #decarbon....., #green.... occurring the most frequently.





**Figure 14: Hashtags used in greenwashed posts categorized by root words.**

Images played a lesser role in the content analysis than expected. Of the total 1013 social media posts that had sustainable claims, only 354 (35 %) used greenwashing in the imagery. Most of the social media posts that contained images showed products in the images and reels, the remaining showed instead images of leaves, mushrooms, rivers, sunsets and so on.

Emojis played an even lesser role in the content analysis than expected. 109 posts (10%) out of the total 1013 social media posts with sustainability claims included emojis that could be considered greenwashing, such as the circular green land and blue ocean Globe, Green Heart, Herb, Leaf Fluttering in Wind, green Recycling Symbol, and Battery emojis (Emojipedia, 2024). Again, the Energy companies were the main users of emojis, with 87 greenwashed posts including emojis, with Paper/pulp/timber having 9 and manufacturing 7.

## 8 Critical examination and discussion

The theoretical part of this research involved finding literature regarding greenwashing. Greenwashing is not a new idea but there is limited literature about it. For this research greenwashing is “green claims without proper evidence”.

The content analysis part of this research was far larger than expected, with a total of 3864 posts read/viewed and evaluated.

The stronghold of Facebook and Instagram in social media marketing is evident with only one of the 50 companies analysed in this research using neither Facebook nor Instagram, choosing to use YouTube instead. In the *Theoretical Background: Social Media Marketing*, it showed that YouTube was the 2<sup>nd</sup> largest social media user base after Facebook, however in the research it was used by the companies at a lower rate than Facebook, Instagram and X (formerly known as Twitter).

Further, almost 74 % of the social media posts analysed were made on Facebook or Instagram. Facebook and Instagram belong to Meta Platforms Inc. and this company leads the social media marketing dominance in Ostrobothnia.

Changing our social media habits is not going to save the world. Reading, liking, following, and sharing posts is not going to reduce carbon emissions around the world. It is important to acknowledge greenwashing and call out companies that do not provide evidence of its actions. Understanding why the Energy and Paper/pulp/timber industries are the greatest users of greenwashing in social media posts is complex. But it must be asked, why are these industries even greenwashing at this level? These companies are not greenwashing for the average, everyday consumer, but for commercial and governmental purposes.

The Energy Industry is impossible to avoid, with fossils having run the modern world since its discovery, and the Vaasa region (part of Ostrobothnia) is known and promoted for the cluster of energy companies in and around. With greenhouse gas emissions of great concern, the Energy industry is trying to find solutions that reduce our reliance on fossil fuels. It is the way that they are marketing themselves that flags them as greenwashers. Further, players in the supply chain may grow sceptical of companies that greenwash

and/or have poor climate performance to avoid being identified as harmful to environment by association.

Some companies should consider why they are producing as many posts as they do with a large volume of posts across multiple social media platforms. The posts are not influencing, engaging or effective if there are so few likes and comments. Decreasing the number of posts and increasing the credibility and quality of information would most like give greater transparency to posts with sustainability claims.

The power of the hashtag should be reevaluated by some industries as it can be used to link and highlight marketing strategies within a company. However, it should be noted that some companies added greenwashed hashtags to social media posts that were unrelated and otherwise had no sustainability claims in them. Companies should not be using greenwashing hashtags as slogans. Hashtags are universal and they can create engagement without breaking the internet.

A small handful of social media posts of the 1013 posts, questioned the role of greenwashing in social media, indicating that companies are aware of their greenwashing actions, for example “but greenwashing, green-hushing and even green-botching.... holds up net zero targets”. #greenwashing was used twice and #greenhushing was used once in this post. Questioning greenwashing in this manner, places equal blame on companies and the goals that are being set.

Numbers and statistics sound trustworthy and should be relied upon as tools in social media posts with sustainability claims instead of simply greenwashing. Adding links for further information, where the data is laid out in a simple manner with evidence is the ultimate way to avoid customer assuming the posts are greenwashing. It is seen in *Theoretical background: Alternatives to greenwashing* that full disclosure of information from all sources within a company is the best way to avoid backlash.

With only 3.6 % of the greenwashing posts providing some evidence in this research, companies should strive to better explain its social media posts. It is unethical to present consumers with green claims without offering more explanation. Green social media posts

need to be designed in a truthful manner to avoid false, misleading, and meaningless greenwashed posts.

Out of curiosity, it was possible for the researcher in some cases to find supporting evidence for the sustainability claims by searching for the information presented in the greenwashed posts. This was done by searching for newspaper reports on independent websites, press releases on the company website, and for goals and standards published on the company website. This information was not found in a linear approach and involved searching for the information. However in some cases, when the claims seemed too good to be true, the researcher found that these claims had no evidence at all and that they were using greenwashing to deceive the readers and draw their attention away from more troubling issues.

Further, employees and associates of companies are aware of what is happening within the walls and corridors and may view social media posts of their employer. Presenting an alternative version of the company in greenwashed social media posts can alienate them.

Goals, standards, and labels as well as what laws are being followed are an easy way for the company to present its green credentials, as show in *Theoretical Background: What goals and standards are suggested?* In the research, it was shown that of the social media posts that included evidence of their sustainability claims (3.6 %), many used labels, goals and standards in their evidence. By using labels, goals and standards, is easy for a social media user to compare, understand and evaluate this information easier than fluffy and descriptive text with rainbows, unicorns and sun shining on wet leaves in the associated images.

The companies were chosen as they used English on their websites and in their social media posts. English is often used by companies to appeal to international readers and potential international business.

As a side note, it should be noted that many of the 50 companies also had posts in Finnish, Swedish, German, Danish and so on. These posts whilst not recorded in this research were skimmed over. Many of these posts did not include sustainability claims in the text as they were often employment openings for locally based staff.

It should be noted that it is unlikely that any of the profiled companies are truly sustainable according the definition of sustainability given in the *Sustainable or responsible business* section.

## 9 Further research

The following section of this thesis will lay out ideas for further examination. There are multiple suggestions that came about through this research, as the social media posts of 50 different companies opened a whole can of worms.

By its nature, social media allows for companies to quickly reach out to social media users. There is less editing and checking and more mistakes in the message can be made. However, it is also possible to edit most posts on social media. The post below made by Oy Prevox Ab is a prime example of a mistake and greenwashing in one, with xx % recycled polypropylene, and as of publication still contains this error. Anyone can make an error, but that error does not become a mistake until you refuse to correct it. Further research into the use of social media in companies and who is making the decisions to press the post button could be of interest.




**Figure 15: Example of mistakes in social media by companies.**

Research should be made into why companies do not have their social media links on their websites. During the research it was discovered that a prominent IT and marketing company in Ostrobothnia did not include its social media accounts on its website. A quick phone call was made to the project manager who did not know that the social media links were missing from the website. Screws fall out all the time, the world is an imperfect place. At the time of publication, the links are still missing from the website of this prominent IT and marketing company.

Some of the companies included in this research have hundreds of thousands of followers. Hitachi Energy for example have 391 000 followers on Facebook as of January 2024 alone. Many of the Facebook posts that Hitachi Energy has published only have between 20 and 300 likes and many have no comments. Further research into the role of posts should be undertaken with emphasis placed on the reason behind making greenwashed posts with few responses and likes.

This research was simplified to allow for a greater number of companies to be examined and a broad profile of industries. A more sophisticated examination of the linguistic and non-linguistic clues could be of interest to refine what consumers, industry experts and legislators to better refine laws and guides to prevent greenwashing.

Further research into how companies should react to cybertroopers, or trolls is needed. Comments, such as below in Figure 16, add an additional narrative to UPM's positive sounding, albeit greenwashed post. Unfortunately, some companies have a reputation of green colonisation that is difficult to greenwash away. Such comments by cybertroopers can cause social media users to question the validity of company social media posts. Companies are still treating their social media accounts as they treat their websites, as a one-way communication tool with its customers by not interacting with customers (or cybertroopers/trolls).

 **UPM - The Biofore Company** 4 October 2023 · 🌐

No biodiversity, no future Beyond Fossils. 🌍💚

🌲 Forests are at the heart of our business, and it goes without saying we're committed to their well-being.

We monitor the state of our forests against nine indicators. For example

- 👉 The amount of broadleaved trees
- 👉 protected area and the amount of decaying wood
- 👉 the number of alternative regeneration methods and collaboration projects.


etc..

You can find all of our indicators (and how we are doing) on [upm.com/biodiversity](https://www.upm.com/biodiversity)

#UPMForest #Forest

Here's a good read from Tuomas Kara about our everyday activities safeguarding biodiversity in our forests.

<https://www.upm.com/.../biodiversity-enables-our-operations/>




UPM.COM

**Biodiversity enables our operations**

Trees and other organisms growing in the forest are at the heart of our busines...

👍 2 1 comment

👍 Like    💬 Comment    ➦ Share

 **Rot Mejias**

The Finnish paper pulp multinational UPM operates pulp mills in, among other places, Uruguay. In addition to the fact that the ordinary business is environmentally harmful and causes major environmental problems in itself, accidents happen every now and then that are major urgent environmental crimes without a single line being written about it on their website or in the Nordic media. At the latest on Tuesday, UPM dumped waste water containing huge amounts of caustic soda into a water channel at the company's pulp mill in the middle of the country. era. This is a huge environmental crime and a disaster.

19 w Like Reply

**Figure 16: Example of cybertrooper/troll comments on social media.**



Further, no financial figures are mentioned in posts for donations around Christmas time. The lack of transparency of the gifts given to, for example, turtles, schools and environmental clean-ups means that some companies may only be giving nominal sums. Further research could be made into how companies should disclose the information about charity gifts and donations for clarity.

Further study could be made into why specific industries use the mix of social media that they do. Cross-posting is common, but some industries, for example Hospitality/Food and Culture used Facebook and Instagram more than X (formerly known as Twitter) and YouTube.

Of the companies that have low percentages of greenwashing posts, for example those in the Culture, Earthworks, Education, Hospitality/Food, Logistics and Marine Manufacturing industries, research could be made as to if they are participating in greenhushing instead of greenwashing.

Further research could be of interest into greenwashing in individual companies' mobile applications, online games and gamifications, and how this affects consumer attitudes.

## 10 Conclusion

The first purpose of this content analysis was to map out how companies in Ostrobothnia, Finland, are presenting sustainability on their websites, with 29 out of 50 presenting sustainability on their websites.

The second purpose of this thesis was to see if companies are using greenwashing in their social media posts and the characteristics of it. Of all the posts that contained sustainability claims, only 3.6 % of them provided evidence, leaving a massive 96.4 % of posts with sustainability claims considered as greenwashing. This research has shown that companies do greenwash in their social media posts with the text of the posts being the main area of greenwashing, with hashtags adding to the level of greenwashing. The images in the social media posts showed a lower rate of greenwashing, with many containing only product images.

It can be concluded from this research that the Energy and Paper/pulp/timber industries are the leaders in the sheer volume of social media posts and most guilty of greenwashing in Ostrobothnia. Without providing evidence of sustainability claims, the Energy and Paper/pulp/timber industries manage social media in an inadequate manner, with confusing truths and a lack of substitutive information.

Marketing has rapidly changed with the increased reliance of social media marketing. The access to low cost, instant and easy posting of messages curated by internal staff has come alongside an increase in green narratives and messages from companies. The Energy and Paper/pulp/timber industries need a renewal of its marketing strategies.

Climate anxious consumers will either find comfort in social media posts or discover that they are being greenwashed. Laws, goals, and standards offer ways for companies to explain their sustainability credentials in a regulated fashion.

Further, changing the social media habits of a company will not affect the daily functions of a company or its true green credentials. Management and marketing are the main areas that will be affected and aiming to provide truthful narratives in social media may even gain the faith of consumers. With transparency comes trust.

## 11 Ethical Considerations and validity of the study

Due to the nature of this research, it should be noted that the author lives and works in the geographical region of Ostrobothnia. The author has worked at, been in contact with, purchased products/services from, and knows people who work for several of the companies that are part of the research. Further, the author's bachelor thesis was completed for Logset Forest Machines in 2004.

The author of this research has investments in shares in some of the companies included in this research. This research is unlikely to affect the value of the shares or convince the author to sell its shares.

None of the companies that have been profiled in this research have been contacted for comment. This research in its entirety been conducted as a content analysis.

It is unclear if any of the companies in this research have deleted social media posts during the time that this research has taken place, and it is difficult to report on removals of posts due to the nature of social media.

Given that this research is based on a geographical location, Ostrobothnia, generalising the research results may give false ideas about the industries profiled. On the other hand, the companies that are included in this research use English in their digital marketing and therefore profile their companies as international businesses. The research results may not be limited fully to the geographical location and may be similar elsewhere.

The research was carried out as a content analysis and the method in which the social media posts were coded is explained in *Methods and procedures*. The reliability of this research and the accuracy of the data is only as reliable and as accurate as the researcher. However, following the guide that was established in *Methods and procedures* in its simplicity, and following a high level of consistency, another researcher should be able to replicate this study and have with the same results.

This research set out to examine how companies in Ostrobothnia, Finland presented sustainability on their websites. It was found that 29 of the 50 companies included in the research had sustainability mentioned on their website and 13 including sustainability in

their annual or sustainability reports. Further, the research set out to see if companies were using greenwashing in social media and how. This was shown mainly with text and hashtags, with the associated imagery. Finally, this research uncovered which of the industries used greenwashing in social media the most.

For the theoretical background, it should be noted that greenwashing has been increasing in prominence since the 1990's and then more so with digital marketing. It is not as prominent as the author would wish, and leaves room for more literature.

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## 15 Appendices

### 15.1 APPENDIX A: List of companies

Name	Text	Industry	Website
<b>ABB</b>	ABB employs 5000 in Finland, head office in Sweden/Switzerland. Electrical, robotics and automation.	Energy	<a href="http://global.abb/group/en">global.abb/group/en</a>
<b>Afry</b>	Engineering office located in Vaasa, head office in Sweden.	Consultancy	<a href="http://afry.com">afry.com</a>
<b>Alma</b>	Adult education centre, located in Vaasa.	Education	<a href="http://uusi.opistopalvelut.fi/vasa/en/">uusi.opistopalvelut.fi/vasa/en/</a>
<b>Axopar Boats</b>	Boat manufacturer. Creative and Innovation HQ in Vaasa, headquarters in Helsinki.	Marine Manufacturing	<a href="http://axopar.com">axopar.com</a>
<b>Baltic Yachts</b>	Elite yachts, head office in Jakobstad, manufacturing in Larsmo.	Marine Manufacturing	<a href="http://balticyachts.fi">balticyachts.fi</a>
<b>Bock's Corner Brewery</b>	Restaurant and brewery located in Vaasa.	Hospitality/Food	<a href="http://bockscornerbrewery.com">bockscornerbrewery.com</a>
<b>Brothers Nygård</b>	Earthworks company located in Oravais.	Earthworks	<a href="http://brnygard.com/en/">brnygard.com/en/</a>

<b>Citec/Cyient</b>	Engineering consultants. Headquarters in Vaasa, approx. 1200 employees. A Cyient Company.	Consultancy	<a href="http://cyient.com">cyient.com</a>
<b>Danfoss</b>	Manufacturer of pumps, seals, climate, energy products. Factory in Vaasa, head office in Denmark.	Energy	<a href="http://danfoss.com">danfoss.com</a>
<b>EKA composite</b>	Boat manufacturing. Factory in Oravais.	Marine Manufacturing	<a href="http://ekacomposite.com">ekacomposite.com</a>
<b>Ekeri</b>	Truck trailer manufacturing. Located in Källby.	Manufacturing	<a href="http://ekeri.com">ekeri.com</a>
<b>Finnish Superberries</b>	Organic aronia berry products grown on Ostrobothnia. Head office in Vaasa.	Hospitality/Food	<a href="http://finnishsuperberries.com">finnishsuperberries.com</a>
<b>Finn-power</b>	Crimping machines for industry. Located in Härmä.	Manufacturing	<a href="http://finnpower.fi">finnpower.fi</a>
<b>Freja Logistics</b>	Logistics. Road, sea, and air freight. Office in Vaasa, head office in Denmark.	Logistics	<a href="http://freja.com">freja.com</a>
<b>Hejm</b>	Restaurant in Vaasa.	Hospitality/Food	<a href="http://restauranthejm.com">restauranthejm.com</a>
<b>Hitachi Energy</b>	Manufactures, designs, supplies, and maintains transformers reactors etc. Finnish headquarters located in Vaasa. Daughter company of Hitachi Ltd in Japan.	Energy	<a href="http://hitachienergy.com">hitachienergy.com</a>

<b>Kaiser Eur-Mark</b>	Manufacturer of dry and wet vacuum trucks. Located in Nykarleby.	Manufacturing	<a href="http://kaiser-eurmark.fi">kaiser-eurmark.fi</a>
<b>Kemira</b>	Chemicals for manufacturing. Head office in Helsinki, sales office in Vaasa.	Manufacturing	<a href="http://kemira.com">kemira.com</a>
<b>Kempower</b>	Electric charging solutions. Headquarters in Lahti, office in Vaasa.	Energy	<a href="http://kempower.com">kempower.com</a>
<b>KWH Logistics</b>	Shipping company. Daughter company of KWH Group. Head office in Vaasa.	Logistics	<a href="http://kwhlogistics.com">kwhlogistics.com</a>
<b>Kyrö Distillery Company</b>	Alcohol distillery. Located in Isokyrö.	Hospitality/Food	<a href="http://kyrodistillery.com">kyrodistillery.com</a>
<b>Lapuan Kankurit</b>	Woven products. Mill and head office located in Lapua.	Consumer products	<a href="http://lapuankankurit.fi">lapuankankurit.fi</a>
<b>Logset</b>	Forest machine manufacturer located in Kvevlax.	Manufacturing	<a href="http://logset.fi">logset.fi</a>
<b>Malakta</b>	Located in Malax, culture space for arts, creativity, and people.	Culture	<a href="http://malakta.fi">malakta.fi</a>
<b>Mente Marine</b>	Automatic trimtabs for marine use. Head office in Vaasa.	Marine Manufacturing	<a href="http://mente-marine.com">mente-marine.com</a>

<b>Merinova</b>	Business and project development, focus on energy technology. Head office in Vaasa.	Energy	<a href="http://merinova.fi">merinova.fi</a>
<b>Mirka</b>	Factory and offices in Jeppo. Daughter company of KWH. Abrasives, tools, and polishing compounds.	Manufacturing	<a href="http://mirka.com">mirka.com</a>
<b>Nautor Swan</b>	Performance sailing yachts. Office and manufacturing in Jakobstad.	Marine Manufacturing	<a href="http://nautorswan.com">nautorswan.com</a>
<b>Nordautomation</b>	Sawmill automation. Head office located in Kristinastad and manufacturing in Alajärvi.	Paper/pulp/timber	<a href="http://nordautomation.fi">nordautomation.fi</a>
<b>Nordic Lights</b>	Lights for heavy-duty vehicles. Located in Jakobstad.	Manufacturing	<a href="http://nordiclights.com">nordiclights.com</a>
<b>Novia</b>	University of Applied Sciences, head office in Vaasa. Over 4000 students.	Education	<a href="http://novia.fi">novia.fi</a>
<b>Prevex</b>	Water trap manufacturer. Head office and manufacturing in Nykarleby.	Manufacturing	<a href="http://prevex.com">prevex.com</a>
<b>Prohoc</b>	Management and recruiting. Head office in Vaasa.	Consultancy	<a href="http://prohoc.fi">prohoc.fi</a>

<b>Ritz Vasa</b>	Old fashioned movie theatre and cultural venue run by a non-profit. Located in Vaasa.	Culture	<a href="http://ritz.fi">ritz.fi</a>
<b>Sargo Boats</b>	Boat manufacturer, formerly Minor. Located in Kokkola.	Marine Manufacturing	<a href="http://sargoboats.fi">sargoboats.fi</a>
<b>Strampen</b>	Restaurant and venue in Vaasa.	Hospitality/Food	<a href="http://strampen.com">strampen.com</a>
<b>T-Drill</b>	Tube and pipe fabrication. Head office in Laihia.	Manufacturing	<a href="http://t-drill.com">t-drill.com</a>
<b>The Knitting Barber</b>	Knitting accessories. Head office in Vaasa.	Consumer products	<a href="http://theknittingbarber.com">theknittingbarber.com</a>
<b>UPM</b>	Timber and paper manufacturing. Head office in Helsinki, locations around Ostrobothnia.	Paper/pulp/timber	<a href="http://upm.com">upm.com</a>
<b>Vamia</b>	Vocational school, located in Vaasa.	Education	<a href="http://vamia.fi">vamia.fi</a>
<b>VASEK</b>	Business and development company owned by the municipalities in Vaasa region. Head office in Vaasa.	Consultancy	<a href="http://vasek.fi">vasek.fi</a>
<b>VEO</b>	Headquarters in Vaasa. Employs 500. Energy solutions, automation.	Energy	<a href="http://veo.fi">veo.fi</a>



<b>Vestas Finland</b>	Wind power technology. Danish company with Finnish head office located in Vaasa.	Energy	<a href="http://vestas.com">vestas.com</a>
<b>VILPE</b>	Headquarters in Korsholm, employs 180. Air ventilation, structural ventilation, roof fasteners.	Manufacturing	<a href="http://vilpe.com">vilpe.com</a>
<b>Visma</b>	Software solutions. Head office in Norway, office in Vaasa.	Software	<a href="http://visma.fi">visma.fi</a>
<b>Wapice</b>	Software solutions and technology. Head office in Vaasa.	Energy	<a href="http://wapice.com">wapice.com</a>
<b>Wärtsilä</b>	Head office in Vaasa, 3700 employed in Finland, Marine and energy solutions.	Energy	<a href="http://wartsila.com">wartsila.com</a>
<b>Wasaline</b>	Ferry company for route Vaasa-Umeå. Head office located in Vaasa.	Logistics	<a href="http://wasaline.com">wasaline.com</a>
<b>Wild&amp;Berg</b>	Snacks and treats, protein bars. Located in Kaustinen.	Hospitality/Food	<a href="http://wildandberg.fi">wildandberg.fi</a>
<b>Williamson Logistics</b>	Road freight. Located in Vaasa.	Logistics	<a href="http://williamsson.fi">williamsson.fi</a>

## 15.2 APPENDIX B: ChatGPT

What role will AI have for role in greenwashing on social media? (ChatGPT 3.5, 2024)

ChatGPT

Greenwashing refers to the deceptive practice of making exaggerated or false claims about a company's environmental efforts or sustainability initiatives to create a positive image, even when the company's actions may not align with such claims. While AI itself does not engage in greenwashing, it can play a role in both detecting and potentially contributing to the phenomenon on social media:

- Detection of Greenwashing

AI can be employed to analyse vast amounts of data on social media to identify potential instances of greenwashing. Natural Language Processing (NLP) algorithms can be used to analyse the content of posts, comments, and discussions to detect inconsistencies or discrepancies between a company's environmental claims and its actual practices.

- Sentiment Analysis

AI can perform sentiment analysis on social media conversations related to a company's environmental initiatives. By gauging the sentiment of user comments and discussions, AI algorithms may identify patterns that suggest whether the company's claims are well-received or met with scepticism.

- Monitoring News and Updates

AI-powered tools can continuously monitor news articles, reports, and updates related to a company's environmental practices. This information can be cross-referenced with the company's social media content to assess the accuracy of its sustainability claims.

- Exposing Contradictions

AI can assist in identifying contradictions or discrepancies between a company's official statements and actual practices. This can involve analysing not only textual information but also visual content, such as images or videos, to detect inconsistencies.

- Community Reporting and Awareness

AI can help in aggregating and analysing community-generated content, such as user reviews, forum discussions, and social media posts, to gauge public sentiment and awareness regarding a company's environmental practices. This can contribute to a more informed public discourse on greenwashing.

On the flip side, it's important to note that AI could potentially be used to perpetuate greenwashing by automating the creation of positive content or manipulating sentiment. Companies may misuse AI to generate content that portrays them as more environmentally friendly than it actually are.

To combat greenwashing, a multi-faceted approach is necessary, involving not only AI detection tools but also regulatory measures, transparency initiatives, and consumer awareness campaigns. As AI technologies advance, it becomes crucial to ensure its responsible and ethical use in addressing environmental concerns and promoting genuine sustainability practices.