Discourse Analysis on Climate Change

From Guardian Newspaper articles on Business, Economy and Climate Change

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Abstract

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This thesis aimed to produce a discourse analysis review of selected European press articles about climate change. According to the press, the action or lack of action on climate change can impact European businesses and the economy.

The theory section focused on climate change discussion related to the European economy and potential action options about climate change. Using discourse analysis, the author analyzed the content of articles, twelve in total, chosen from the Guardian News Media with the aim to follow climate change discourse for five years. The articles were grouped in chronological order (two per year), and the objective was to assess how climate change's discourse evolved in those years.

The results revealed that the most occurring theme was the need for immediate action to revert or mitigate the effects of climate change. Also, inaction was seen as a terrible loss for businesses and the economy. The majority of the articles referred to "International Climate Conferences" because Climate Summits are the events where policymakers discuss climate change and where the press is always present.

The journalists often used strong expressions warning about the seriousness and importance of the theme, explaining in detail why policymakers and businesses needed to act now, implementing a greener and more sustainable system to save the planet's future.

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1 Introduction

Over the last ten years, awareness of anthropogenic climate change has grown and become one of the most pressing issues facing our planet. Climate Change or the global rising of temperatures has been extensively studied during the last decade. Therefore, the scientific community has agreed that it has a robust human-made component. It used to be considered one of, if not the most difficult, a challenge for the global community to tackle. However, it slipped away from the headlines when the last American administration did not show much interest in the subject, affecting their oil and coal industries. After Covid 19 became the “main enemy” to combat across the world, Climate Change was left even more for the second plan. Europe was the first region in the world to Industrialize, which multiplied green gas emissions and therefore felt a historical responsibility towards this issue. This fact could be the underlying reason why Europe, more specifically represented by the EU, has traced the world's most ambitious environmental plan, which is to become carbon neutral by 2050.

Although climate change is a global issue, its effects and impacts are not experienced or felt the same across the world. Some countries will be more or less affected in accordance with how fragile their environment is. (Bedsworth 2009). According to the National Centers for Environmental Information, Five of the warmest years on earth fell in the period beginning in 2010 (NCEI,2017). According to the IPCC climate change report of 2014, the tendency of the climate to warm will continue. If no action is taken, temperatures may globally rise to 4.8 °C causing ocean levels to rise and other catastrophes that may endanger one million species (IPCC, 2019).

Through the mass media, the public learns about the scientific findings relating to issues that may affect people's lives. According to Castells, media visibility was crucial in moving climate change from a public issue to a policy concern. The public understanding of climate change is essential to bring social practices and institutions that affect it. (Castells 2009 p. 316) The idea for this thesis was born out of a personal drive to investigate the press coverage of climate change during the last decade. It has the objective to inform, raise the awareness of

how vital this issue for humanity and all living species is, for which is the "clock is ticking", and some action must be taken before the point of no return is reached.

1.1 Research Context

For many decades, Pollution (in water, soil, and air) was considered the most critical challenge for Europe and the world to deal with in order to preserve nature and its resources. Climate change was not debated on a deep level because most specialists and government leaders did not consider human beings' activities on earth to have any severe possible impact on the planet's climate. It was not until 2001 that an intergovernmental panel on climate change established a consensus in this matter, that the world was approaching a period of global warming and that greenhouse gas emissions could be the major contributors to this warming (IPCC 2012.).

Even after these discoveries, many governments refused to subscribe to this idea, preferring to finance (with the aid of oil companies) parallel research by scientists who defended that climate variations were natural and independent of human activity.

A protocol with the name Kyoto protocol was signed in 1997 by 37 industrialized countries that had the objective to bind those countries in significantly reducing their greenhouse gas emissions. This protocol was an excellent starting plan and had flaws being one of them that it was signed over 20 years ago. At that time, developing states such as China or India were not the industrial powerhouses they represent today. Therefore the treaty did not demand as much diligence from those countries as it demanded from rich countries.

An amendment to the protocol known as the Doha Amendment was signed in 2012 with the EU still committed to it but non-participation of other countries that had signed up for the first agreement, among them Canada, New Zealand, Japan, Russia, and the United States. Lack of enthusiasm by the United States has possibly demotivated other countries to continue signatories of an agreement that could potentially hurt their economies. In 2016 a much more successful agreement called the Paris agreement was signed by 196 countries to keep the temperature increase at a maximum of 1.5 degrees above pre-Industrial levels to

reduce the adverse impact of climate change and incentivize industrial investments towards low emission technologies.

The world has changed as in recent years; those countries have been among major contributors to CO2 emissions in the atmosphere. The other major problem was the United States' failure in ratifying this protocol. Any international climate treaty will need the US' total contribution in order to be successful in the future and more demanding towards the economies of large developing countries because emissions do not stay enclosed within any countries borders.

This subject was chosen because after living in the arctic's Lapland, the author became more interested in the weather's issues and the region's flora and fauna. After working in Arktikum as a guide at the beginning of 2009, he had a chance to learn more about climate change, as Arktikum is, besides a museum, also a research institute about the Arctic Environment.

In Brazil, the author's home country, the effects of climate change have been quite pronounced, as there have been many more mudslides than expected in some areas while other areas which are used to rainfall have seen drought. A few years ago, there was even a hurricane (extremely rare in the southern Atlantic).

For many years, the Brazilian government has been investing in renewable energy sources such as ethanol and natural gas(bio-methane). Traditionally, the country has only recently discovered oil reserves, and sugar cane is cheap and easy to grow in tropical climates. The discovery that sugarcane and natural gas are less polluting fuels than fossil-based fuels has only incentivized the government to invest not only in growing more crops but also in exporting ethanol and ethanol-producing technology to other nations. (Chillrud, EESI, 2016)

Most recently, Brazil has announced new ethanol processing plants in South Africa based on Brazilian technology. Alternative energy resources such as ethanol, biodiesel, and wind-generated energy can be produced and implemented on a large scale to reduce emissions which are the leading cause of the greenhouse gas effect. (Pereira et al., 2018)

1.2 Aim of Research.

This thesis aims to produce a discourse analysis review of a small number of European Press articles about Climate change and how, in their opinion, could the action or lack of action on Climate Change impact European businesses and the economy. It is also a secondary objective to identify common themes and make an outline of recurring themes. With a selection of articles derived from 2010 until 2015, the Guardian newspaper forms the data source for the study. This newspaper was chosen because of its reliability and its extensive archive of articles. The objective was to get two sample articles of each year, one from the beginning and another from the end of the year covering five years from 2010 till 2015, and analyze them in order to find out how the theme of Climate Change has been presented during those years and whether its importance has increased or decreased.

1.3 Research questions.

The main research question is:

How does the European press portray Climate Change: which themes and discourses are used in the selected articles in The Guardian newspaper?
Secondary questions which were formulated in order to facilitate answering the primary question are:

How do the selected articles argue we should act on climate change?
What kind of action do they suggest for the coming years?
How is the impact of climate change constructed in the articles?

The emergency of climate change as a recognized problem is rooted firmly in the work of scientists. Crucially, the burst of policy activity from that time was only possible after "the problem" of climate change had begun to be framed differently against the constantly changing backdrop of potentially related "problems" and available solutions (Jordan 2010, 190). The challenge of climate change has been one of the most critical issues affecting the world for these past years because it affects all aspects of human survival, such as food crops, animal husbandry, and possible natural disasters. Climate change only comes second

in importance to war, epidemics, and world recession. Leaders from the whole world were meeting in December 2019 in Chile (COP 25) to debate climate change. The following steps countries need to take to address this issue; for these reasons, this theme is considered of the highest political and economic relevance.

This issue is significant as it requires that almost every country cooperates because even if a group of countries decided to cut emissions if another group decides not to do so, there would be a failure in curbing greenhouse emissions.
The European Union is ranked as the third-largest economy globally, right after China and the United States. Besides this tremendous Economic power, the EU also has a substantial political influence since it is one of the most invested in projects helping developing countries. Three of the significant EU countries are also members of the G7 (The seven wealthiest countries in the world).

With all this influence in the world, it is evident that EU decisions have a strong impact not only within its borders but also internationally. Getting to know the EU rhetoric on climate change is essential because any international climate agreement needs the EU's participation to be effective. As residents of an EU Member state, we must know the view of our leaders on the issue. Europe proclaims itself as a leader in environmental initiatives. If this is proven to be, then the EU should act as a trailblazer guiding and incentivizing less experienced (or less willing) countries to follow its policies to safeguard the environment for future generations.

1.3.1 Research Ethics

This thesis will be research-based. The author of this thesis will abide by ethical procedures during the whole stages of thesis production. Since the research will be based on publicly available articles, the author will not need to be overly concerned about anonymity, confidentiality, or information disclosure rights. The newspaper’s journalists and editors have already taken care of this issue. Although the articles will be analyzed from a critical point of view, the author will commit himself to respect other people's writings and points of view, always revealing the sources from where the ideas were taken.

2 Climate Change and Action

This chapter aims to give an introduction to the reader about what is climate change and why we should be concerned with it. The topic of climate change is a central issue which the thesis will deal with. The author also finds it essential to familiarise the readers with the best available renewable green energy sources that should be invested in and expanded to substitute fossil fuels considered the "greatest villains" of climate change.

2.1 Overview of published Literature on Climate Change

After researching the theme, the author came across Annika Nilsson's book called A Changing Arctic Climate. This is a comprehensive book dealing with Climate Change, mainly focusing on the Arctic Region. In her dissertation, Nilsson examines how the interplay between policy and knowledge production affects Arctic climate change. She analyzes how structures of international cooperation can shape knowledge production and discusses how knowledge production influences policy. The empirical material was the Arctic Climate Impact Assessment (ACIA). She concludes that the US constantly challenges the legitimacy of the Arctic Council and its climate agenda and disregards the Arctic Indigenous People's point of view. The participation of Indigenous peoples in the Arctic Council has helped to introduce traditional knowledge on the political discussion frame, but there is still a lack of will of some political actors, and this has made ACIA work more difficult and biased (Nilsson 2007, 150)

The study by John McCormick Environmental Policy in the European Union of 2001 gives us a good highlight about crucial topics in the EU when dealing with the environment among which Chemicals and Waste, Air and Water Quality, Acidification and Finally Ozone, Climate Change, and the International Dimension. Of all those topics, the most directly related to this thesis is Climate Change and International Dimensions. At the time this book was published, Climate Change was seen even with more doubts than nowadays. "The question of Climate Change has proven controversial with opinions divided on just how serious a problem it may be (assuming it is a problem at all)" (McCormick, 2001, p. 277). The author mentions that the greenhouse effect has been noticed since the 1890s but only during the 80s has it become a significant international policy. Under the IPCC addressed in this thesis and World Climate conferences, the author proposes adoptions of a monitoring mechanism to assess the

impact of CO2 emissions, a carbon energy tax to impose taxes on the largest polluting countries, and promotion of greater energy efficiency through the SAVE program which also promotes renewable energies. He concludes by stating that the EU has been very active and productive in addressing environmental issues, but there are still changes needed in EU legislation to make this process less bureaucratic (McCormick 2001, p. 292)

Another interesting Study is the Nordic Low CO2 emission possible Scenarios based on GAINS Model by Stefan Åstrom and Antti Tohka from 2010. This study shows how a change in policy within the Nordic Countries will cut down on CO2 emissions by Norway, Sweden, Denmark, Finland, and Iceland and combat Climate Change. The authors guarantee that cutting carbon emissions will also help Europeans in reducing their energy bills. The Nordic countries have some of the most polluting sensitive ecosystems in the world. The study was written with both an English version and a Scandinavian language version, with a summary in the other Nordic languages that are Icelandic and Finnish.

The researchers conclude that even though the Nordics have been acting together for many decades, there is no common Nordic strategy about cutting CO2 emissions. Since they are neighbors' reductions from one country would directly benefit the other ones. The use of biofuels should not be increased in such a way that it would diminish the effects of reducing fossil fuel usage. The authors recommend to policymakers developing more joint strategies and invest in the development and export of "green electricity" to neighboring countries such as Poland, which would also positively impact the region (Åström 2010, p. 14)

The article Depoliticizing adaptation: A Critical Analysis of EU Climate Adaptation Policy by Elise Remling, 2018, criticizes the discourse of climate adaptation as represented in the EU's core policy documents. She defines adaptation as "any deliberate social adjustment that aims to safeguard against actual or expected harmful impacts associated with climate change". Remling chose to analyze in-depth three public policy documents produced by the Commission, The Green Paper, Adapting to climate change in Europe- options for EU action (2007); The White Paper, Adapting to climate change: Towards a European framework for action (2009) and An EU Strategy on adaptation to climate change (2013). She focuses on a six-year-old period to provide insight into the emerging discourse's key characteristics and the changes it has undergone. (Remling, 2018, p. 482)

Rather than seeing adaptation as requiring social or economic change, the documents suggest the challenge of adaptation can be solved by having faith in markets and technological innovation, incorporating adaptation into existing EU policies, and promoting more research. The EU's discourse in those papers constructs Climate Change as a serious enough problem deserving attention but not severe about demanding fundamental societal changes. Policies suggest continuing business as usual, building on green growth, low carbon-based, and consumption-driven economy. Remling seems quite disappointed with the documents, which were full of rhetoric but with minor effective changes closing the article stating it is too early to tell if the Commission's perception of adaptation will become widely institutionalized or changed in the planned revision strategy 2018. (Remling, 2018, p. 493)

An article published by Anna Kukkonen and Tuomas Ylä-Anttila in 2020 entitled The Science-Policy Interface as a Discourse Network: Finland's Climate Change Policy 2002-2015 investigates the climate change policy process in Finland between 2002 and 2015, focusing on the role of scientific actors and arguments in discourse networks. The data was from policy actor's testimonies of the Kyoto protocol (2002) and the Finnish Climate law (2015).

Climate change policymaking has been controversial in Finland. The heavy industry has been influenced dramatically, claiming that climate change mitigation would hurt economic growth and national competitiveness. Finland relies excessively on its forest and metal export industries, explaining why those industries are so influential. (kukkonen&Ylä-Antilla, 2020)

The Finnish Climate law came into force in June 2015. It is a framework law aiming to set up a system to plan, coordinate and track Finnish climate change policymaking in non-emissions trading system sectors. The law does not include legislation for different sectors but a binding long-term emission target of 80% reduction in greenhouse gas emissions by 2050, having 1990 emission levels as reference. The analysis of 86 testimonies between 2002 and 2015 shows that two competing discourse coalitions influenced the Finnish climate change policy process in the 2000s. In 2002 the dominant coalition prioritized economic growth over climate change mitigation, but in 2015, the coalition that argued for ambitious mitigation

policies became the most dominant. Scientific actors gradually changed from the economic coalition into the ecology coalition in 2015. (Kukkonen&Ylä-Antilla, 2020)

2.2 EU's Political Action

The European Union from which Finland and 26 other European countries are member states, is the strongest policymaker in Europe not only because of its population size and area but also because of the political and economic integration among its members is so close that it works similarly that a kingdom or federal state would. Its actions and directives affect directly or indirectly all countries in Europe, whether they are member states. For this reason, it is important to understand what has this organization done in the last decades to address Climate Change.

EU's environmental policy was formally founded with the European Council declaration made in Paris in October 1972. In this last decade, environmental policies have specially developed at an incredible speed. One hundred fifty legal acts relating to the environmental policy were passed between 1987 and 1994, extending environmental policy as one of the critical areas within the EU. The forerunner states (more developed) in domestic environmental policies helped the latecomers (post-2004 new member states) catch up on environmental legislation. However, it was not always that newcomers to the EU had lesser progressive policies. In 1995 when the EU enlarged to include Austria, Finland, and Sweden, it was expected that these highly developed states would give a boost to the EU's environmental policy. The forerunners so far, Germany, Netherlands, and Denmark expected the three newer member states to support a higher level of environmental protection in the EU, which they were having difficulties in archiving since the 1992 Rio summit. The other member states also felt that the enlargement would change the previous balance in environmental policy. (McCormick 2001, 280-281)

The pre-2004 EU member states (EU 15) have a joint emission reduction target of 8% below 1990 levels by 2008-2012. Through internal agreements, some states are allowed an increase in emissions while others should decrease emissions. Most of the 12 newer member states joined after 2004 have 6-8% targets from their base years, while the United States has not ratified the protocol. The IPCC shows these reduction levels are not sufficient

as they should be 50% of reduction in emissions globally, from which 60-80% would come from developed countries. Large developing countries such as the Bric countries (Brazil, Russia, India, China) should also limit their emissions. Those countries are expected to meet targets through domestic policy implementation. However, they are also allowed to meet some of these requirements through investment in projects to reduce emissions in less developed countries and renewable energy projects.

Various measures have been adopted at European levels through the European climate change program policy. For example, the increased use of renewable energy (wind, solar, and biomass), improvement in energy efficiency in building, house holdings, and appliances, a reduction from car's carbon dioxide emissions, incentive measures for manufacturing industries (to reduce emissions), and finally reducing emissions from landfills. The EU's carbon dioxide emission trade scheme is considered one of the most critical projects for the EU's efforts to reduce emissions effectively. At the beginning of 2007, EU representatives approved an ambitious measure called "The climate change and energy plan" to limit EU's emissions by 20% until the year 2020 and achieve a goal of 20% of prime energy consumed in the EU, coming from renewable energy sources.

Emissions from other sectors such as transport, housing, agriculture, and waste will be cut by 10% of the 2005 levels. Member states will contribute per each countries' wealth with goals varying from -20 for the more prosperous states to +20 for poorer member states. The EU will strengthen its emission trade scheme (ETS) for Industries that historically produce more emissions, such as steel and chemical industries. One of the key aspects considered necessary for emission reduction is the increase in renewable energies implying a more diversified energy supply for Europe. In December of 2008, the European Council and European Parliament agreed on a "climate and energy package", which resulted in 6 legislative measures coming into force in April 2009. Since cutting emissions is not expected to revert climate changes soon, other vital strategies proposed are the “National climate change adaptation strategy” and the “Adapting to climate change in Europe” published by the European Commission.

The Copernicus Programme

The Copernicus Programme is the European Union's Earth observation programme coordinated and managed by the European Commission in partnership with the European Space Agency (ESA) and the EU Member states and agencies. Its main goal is to continuously observe the earth providing accurate, timely and easily accessible information helping in understanding and mitigating the effects of climate change and ensuring civil security. Collecting a vast amount of data from satellites, ground, air, and seaborne measurements, Copernicus will produce access to information in the domains of environment and security on a global level providing a comprehensive picture of earth's "health".

Named after European scientist Nicolaus Copernicus, the first man to draw the theory that it was the sun and not the earth at the centre of our planetary system, the program cost €6.7 billion. It was established in 2014 by the Regulation No 377/2014 (Council of the European Union and European Parliament 2014).

In the Copernicus Climate Change Service's press release of the 22nd of April 2021, Copernicus announced 2020 as the warmest year, winter, and autumn on record for Europe with temperatures 3.4°C above average, impacting in snow cover, sea ice and number of days with a maximum temperature below zero. The Storm Alex brought record rainfall and led to above-average river discharges across much western Europe, leading to floods.
In 2020 Global concentrations of CO2 and methane continued to rise in percentages 0.6% and 0.8%, respectively, which amounted to the highest greenhouse gas concentrations since 2003.

Carlo Buontempo, Director of the Copernicus Climate Change Service, emphasizes the comprehensive analysis of variables that Copernicus can provide, including temperature, sea ice, precipitation, river discharge, moisture and others, appealing that its more important than ever to use all available information to help us to act, mitigate and adapt to climate change accelerating or efforts to try to reduce future risks (Lopez, 2020).

European Green Deal

The European Union has made known from the 11th of December 2019 that it was implementing a new strategy called "European Green Deal". The communication begins by stating that the Commission wants to tackle Climate Change which is this generation's "defining task". With the atmosphere warming and the climate changing more each year, at least one million species on the planet are at risk of extinction. The European Green Deal is the European Union's response to these challenges to transform the Union into a Carbon Neutral region by 2050, which means no more Greenhouse Gas emissions would be tolerated after that year. All these changes are to be implemented while still safeguarding the EU's economy, helping it develop into a fair and prosperous society, modern and resource-efficient.

Secondary goals to achieve are to conserve the EU's natural capital and protect its citizens' health and well-being from Environmental risks and disasters. The transition must be just and inclusive. The Commission knows that this initiative will bring challenges to industry and workers due to the substantial changes expected to occur during and after this process. As this goal cannot be achieved by Europe acting alone, the EU will use its influence and resources to mobilize its neighbours and partners to join their efforts to build a sustainable path.

Between 1990 and 2018, the EU already started to transform its economy, aiming towards a carbon-neutral society, emissions have been reduced by 23% while at the same period the economy grew 61%; however, if policies continue in their current format, only 60% of reduction would be achieved until 2050 therefore much more needs to be done for the ambitious goal of 100% decrease (European Commission, 2019, p. 4).

In March 2020, the Commission will adopt an EU industrial strategy. A new circular action plan was drawn to modernize the EU's economy with the key aim of stimulating the development of circular and climate-neutral products in the EU and globally. The circular action plan will give priority to reducing and reusing materials before recycling them. New business models will be fostered, and minimum requirements will be set to prevent products potentially harmful to the environment from being placed on the EU market. Companies will

also have increased responsibility for their production. While all sectors will be affected, particular focus will be placed on the Textiles, construction, electronics, and plastics' sectors, by 2030 for example, all packaging in Europe must be reusable or recyclable, and there will be a new framework on the production and use of plastics including biodegradable, bio-based and single-use.

The Commission will also adopt a more ambitious strategy in relation to climate change adaptation. Climate change will still significantly stress in Europe despite the numerous efforts to mitigate its effects. Europe must then increase its efforts for climate-proofing, resilience, and building. Climate adaptation should have a strong point of influence in private and public investments. Data should be easily accessed by insurers, local business governments, and persons to develop instruments capable of integrating climate change into risk management practices. (European Commission, 2019, p. 5)

2.3 Global Weather Shifts and Alternatives to Action

Shifting world, weather change, food production through the unpredictability of precipitation, rising of the ocean levels, floods, hurricanes and the spread of tropical diseases which have been before are limited only to the tropics. The deicing of Glaciers is only getting worse in all major Ice shelves, from the Arctic sea to the South Pole. Since warm water occupies more area than frozen water, the sea levels are rising at the same pace as the ice melts. Strong evidence suggests that those irreversible changes have reached several ecosystems as diverse as the Amazon rainforest or the arctic tundra, passing through a process of warming and drying.

Mountain Glaciers produce a constant flow of water supply are maybe at high risk of disappearing (Nilsson 2009, 1.). The potential of the harmful effects of greenhouse emissions are real, but the most dangerous effects may still be avoided if we are able to change our hydrocarbon-based energy systems and if we responsibly finance programs aimed at mitigating forest disasters or other disaster relief programs. We have the necessary tools, but we need to implement them aggressively and immediately.

2.3.1 The Greenhouse Effect

The greenhouse effect is a phenomenon that most scientists characterize as the leading cause of the changing climate. For this reason, we must understand how it works and how human activities interfere with the natural course of the Greenhouse Effect in our atmosphere.

Life on earth is directly dependent on solar energy. About 30% of this energy is reflected from the earth's higher atmosphere back towards space. The rest reaches the earth's surface and is reflected in the atmosphere in infrared radiation. The heat caused by infrared radiation is absorbed by greenhouse gases such as water vapor, carbon dioxide, ozone and methane, slowing its escape to the atmosphere. Even though those gases represent only 1% of all the gases in the atmosphere, they regulate the planet's climate by trapping heat like a warm blanket which prevents the heat from dissipating into space. This is called by scientists "the greenhouse effect"; if it did not exist, the temperature on earth would be around 30 degrees colder than what it is, which is far too less than necessary to preserve the ecosystem.

Even though the greenhouse effect is essential to preserve life, it can also exceed its purpose when humans emit more gases than necessary to keep it warm in ideal temperatures (McCormick 2001 278-279.). Burning gasoline, coal, oil and all fossil fuels raise the level of CO2 in the atmosphere. Also, some farming practices can release more methane gas and nitrous oxide. Trees help reduce CO2 gas in the atmosphere by converting it into oxygen so that deforestation can reduce the number of trees trapping carbon and increase greenhouse gases. Population growth is the final factor contributing to greenhouse emissions. With more population, more need to burn fuels to produce heat, and farming and transportation produce more gases. The more gases there are in the atmosphere, the more radiation will be trapped and the higher the temperature will be at the earth's surface and in the lower atmosphere.

During the entire 20th century, the earth's average temperatures increased by 0.6 degrees, but some scientists predict that by the year 2100, the earth's temperatures may increase as

much as 5.8 degrees. Even a slight change in temperatures could lead to severe changes such as fewer supplies of freshwater, flood in some areas and drought in others, endangered species becoming extinct, millions of people living in more vulnerable areas would be unable to plant and therefore have to move away from their lands or face starvation. Carbon dioxide is responsible for 60% of the enhanced greenhouse effect.

If the CO2 emission levels stay on current levels, the amount of gas will double or triple from pre-industrial area levels. The United Nations sees some climate change as inevitable since emissions have occurred since the beginning of industrialization. Because of those 150 years of industrialization, even if emissions would be reduced, the number of gases already produced would still affect the earth for hundreds of years. The measures being taken to combat climate change include reducing the use of fossil fuels, more use of renewable energy, expanding forests and making lifestyle choices such as reducing one's energy consumption.

2.3.2 Environmentally friendly and Renewable Energy Sources

Not all energy sources are prejudicial to our climate and environment. There are those so-called environmentally friendly energy sources. Those produce electrical energy without producing emissions (or producing much fewer emissions) than regular coal and oil-based energy. They are still underused. For example, there are many windy coasts worldwide, but only a few countries possess windmills. As technology advances, industrialized countries maximize better those energy-producing techniques.

These sources emit less CO 2 in the atmosphere than fossil fuels and can help reverse the damage done by 150 years of industrialization. The primary forms of renewable energy are wind power, hydropower, solar energy, Biofuels and Geothermal energy. Although Nuclear Energy has been considered by some scientists as "Climate Change friendly" since it does not have CO2 as a byproduct; it is still a very controversial energy type because it frees water vapor into the atmosphere (some researchers consider it as a possible contributor to the

greenhouse effect). Also, the nuclear waste left, or plutonium, takes thousands of years to lose its radioactivity and must be stored with utmost care. Both Low-tech and high-tech countries such as Ukraine and Japan have been victims of nuclear accidents, which prove this is still an unsafe energy source. Nuclear power has been portrayed as a solution to climate change and energy security by some countries. In contrast, the traditional concerns for accidents and radiation risks and, to some extent, nuclear waste management have been pushed to the background (Teräväinen 2011). A short introduction of the most popular clean energy sources will be presented below.

Wind power:

Airflows can be used to run wind turbines. Globally, the long-term technical potential of wind energy is believed to be five times total current global energy production, or 40 times current electricity demand. This could require large amounts of land to be used for wind turbines, particularly in areas of higher wind resources. Wind power is renewable and produces no greenhouse gases during operation, such as carbon dioxide and methane.

Hydropower:

Since water is 800 times denser than air, even a slow water flow can produce considerable energy. Hydroelectric energy is produced by Dams that harness the flowing power of rivers. The ocean can also be used to produce energy, such as by the influence of the tides.

Solar energy

Solar energy comes from the sun in the form of solar radiation. Solar thermal Panels can collect and distribute this form of energy that can be characterized as passive or active energy depending on how it is collected and distributed.

Biofuels:

Ethanol or biodiesel can be made from sugars (in ethanol) or recycled oils or animal fats in biodiesel. Bioethanol has The United States and Brazil and leader \ producers, while

biodiesel is more commonly used in Europe. They can be used purely or as an additive to fossil fuels to reduce their carbon gas emissions.

Geothermal Energy:

Geothermal energy is obtained from hot water, which naturally emanates from the earth at some specific geographic locations. Pipes capture the water, and its energy makes a fluid boil which moves the turbines, producing electrical energy. Iceland and New Zealand are pioneers in harnessing this type of energy. (Ren21, 2011).

GeoExchange System:

It is the energy stored from the sun a few meters below the surface. In almost every residence, the "free heat" stored in the soil can provide enough energy to heat a house during the winter and cool it down during summer. Even in the Arctic, roves between 4 and 10 degrees, the ground temperature can be a lot warmer than the air temperature in the winter. The soil works like a "battery" charged every summer and can be harvested using a heat pump. Air heat pumps extract energy from the air and ground heat pumps that extract it from the soil. Energy can be extracted from a water source (ex-lake or well) or the ground. In the winter, the system can be reversed entirely that the house can function as a "large refrigerator" with the heat being transferred from inside the house back into the outside air or down into the ground.

Nuclear Energy:

Nuclear energy is obtained from nuclear fission which is a process where atoms split releasing energy. This form of energy was left for last because it is a “semi-green” energy source. Although nuclear power plants produce no greenhouse gas emissions they leave behind a byproduct which is called radioactive waste. Radioactive waste is usually buried in deep underground deposits where it is supposed to stay until its radiation content has lowered making them less dangerous for the environment. Plutonium 239 for example has a half-life of 24,000 years (US NRC, 2019). Nowadays many states such as Finland, France, or Russia are enthusiast supporters of nuclear energy but there are many concerns still regarding its vulnerability to catastrophes such as the one that happened in Fukushima.

3 Writing procedures and Research Method

The author will begin this dissertation by introducing the theme and research questions around it, followed by chapter two, where there will be a brief description about Climate Change and an overview of published literature on the same theme followed by the significant political actions that the European Union has taken on mitigating climate change. The chapter will describe the Greenhouse effect and environmentally friendly and renewable energy sources because, for the reader, it is paramount to understand the context of the study and why it is so important to switch from traditional fossil fuels into greener renewable energy.

In chapter three, the author will present different methodologies that were found most suitable for text analysis to be used on the empiric material. From all the methodologies, Discourse analysis was seen as the best as it gives a tool to find out how discourse contributes to the causation of events and how it is employed to sway the audience towards a certain perception and purpose (Alexander & Stibbe, 2014, p 106).

The chapter will end by explaining the choice of material and reflection and limitations of the research. The empirical material, which will be twelve news articles collected from the Guardian newspaper during the five years 2010-2015, will be analyzed in chapter four. Chapter five contains a summary of the research findings and the author's conclusions on this critical issue.

3.1 Choice of Method and Material

According to Burnham in Research Methods in Politics, discourse analysis focuses on the role language, texts, conversations, the media, or even academic research have in creating institutions and influencing behavior. Institutions can be described as established social order comprising organized behavior bound by rules and norms. Discourse is defined as interrelated texts—conversations and practices associated with a particular object. Objects could be, for example, abortion law reform or policies towards Iraq. Discourse associated with these objects is present in debates, speeches, articles in the press, academic books, and

TV programs. It is generally agreed that discourses are systems of signification; reality is constructed by people who give meaning and significance to objects in the material world. Many discourses are organized in contrasting opposites: good and evil, poor and rich, democracy, and authoritarianism. (Burnham 2008, p. 250)

Burnham also emphasizes that discourses reproduce the everyday assumptions of society, and those common perceptions are encouraged and reinforced by those present in the media, such as politicians, journalists, and experts. Discourse's frame and constrain courses of action, some promoted as sensible, moral, and legitimate commanding support while others are discouraged as stupid, immoral and illegitimate. The general public is guided and constrained on how to respond to specific events or crises. Discourse analysis must reveal these common assumptions and how they are related to different interests in society.

Discourse theory begins with the assumption that all actions are meaningful and that their objectives are products of specific historical conditions. Discourse theory must research the origins of social practices and institutions and critically analyze the discourse linked to them, giving legitimacy and meaning (Burnham 2008, p. 251).

Discourse analysis should also show how language can be used to deceive and manipulate the audience. Language and discourse are controlled by the powerful in a society that can impose particular meanings to social reality, which protect their interests, undermining society. This is achieved by spreading confusion and deceit and allowing the exploitation of the weak to continue. In this discourse analysis, the author of the thesis intends to show who might win or lose in discourses contributing to understanding social processes. The author will ensure that the analysis is rigorous, systematic and convincing with an appropriate selection of texts chosen for analysis. The relevant research questions are addressed.

In Burnham's perspective, discourse theory assumes that all actions and objects are meaningful and products of specific historical conditions. Therefore, it needs to research the origins of social institutions and practices and critically analyze the discourses linked to them, continuing to give them legitimacy and meaning. It is also essentially a political definition, focusing on attempts by groups to impose assumptions and values on others,

promoting their interests. The realistic approach assumes that the social world consists of independently existing sets of objects inheriting causal powers and properties. Discourse analysis aims to explain the role of discourses and show how they contribute to the causation of events and social processes and how robust these processes are.

Other authors such as Faircloud believes that discourse analysis sees language as one element of social practice and claims to see its articulation with other elements. Another critical discourse analysis category is concerned mainly with social change and its relation to social relations of domination and power. Critical analysis' role exposes how language and discourses are used by the powerful to confuse and exploit the masses. One cannot forget the role of discourse in building social reality or exposing which groups gain and lose due to how the discourse is structured. (Burnham 2008, p. 252)

Holst defines Content analysis as any technique used for drawing inferences by objectively and systematically identifying specified characteristics of messages. Content analysis was a technique for analyzing communications, prevalent during the Cold war when it was used to analyze Soviet communications such as in newspapers or television. The qualitative method of content analysis was the method chosen for this thesis. As a researcher, the author will decide the intrinsic value, interest, and originality of the material as well as the topic or hypothesis to investigate and which documents or resources are appropriate sources of evidence and then select a sample of texts to investigate and analyze (Holst, 1969, p. 14).

The dictionary defines rhetorical analysis to understand and interpret texts by examining the rhetorical devices used, such as composition and persuasion, the context of the text and the audience, both historical and contemporary (Zyskind 1979, xi).

Perelman defines rhetorical analysis on The New Rhetoric and Humanities as referring to an analysis of a text or another source. It can be in writing or other means of communication that consider rhetorical situations such as purpose, audience, genre, stance, and design. A rhetorical situation involves employing reading strategies such as being more specific, critical reading such as why and how the text was written in the first place, the intended audience and the text's aim. The analyzer must examine the writer's purpose and relationship to the readers. The writers' language is also of extreme importance, such as his/her tones,

connotations, figures of speech and stereotypes. In contrast with a review, the analyzer does not agree or disagrees with the author, but his sole purpose is to analyze the author's writing and how he/she built his/her judgments (Perelman, 1979, p. 64).

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Rhetoric can be thought of as the way of phrasing what is said and the impact. Some examples of rhetorical strategies presented by Perelman:
Exemplification means searching for examples in the text, such as statistics, personal experiences, etc., which add to the meaning. "Comparison and contrast" are when the author compares two or more elements. "Repetition" is when the writer repeats certain words to emphasize their meaning or reinforce the message. "Metaphor" is when two elements are compared by words as or like (Perelman, 1979, p. 94).

This study will use discourse analysis as the chosen research method. Out of the three presented methodologies, discourse analysis is believed to be the best in this case because it allows for a deeper meaning interpretation of a text or speech. The researcher can bypass the literal message and dissect each separate paragraph searching for what the author means with the message. For what reason he wrote it, to whom and whether there is any other possible interpretation or hidden meanings.

From the writings of Perelman, the author concludes that Rhetorical analysis focuses on how language is intentionally used to persuade the audience into a particular goal or direction. At the same time, Burnham describes discourse analysis as a method that focuses on how

inferences may be made from linguistic elements in persuasive texts regarding social orders and the writer's belief system and worldview. Because of its more holistic approach, the author chose Discourse analysis when considering that the empirical material analyzed will be newspaper articles. Discourse analysis is more appealing for articles, while rhetoric would be more fit to analyze speeches where the audience, intention and purpose are more straightforward.

To unveil the explicit and implicit meanings hidden inside the European press, articles from The Guardian will be analyzed (Guardian News and Media Limited 2021). This British newspaper was chosen over other newspapers because its printed language is English. Therefore there would be no need of translating the articles from another language into English and due to its vast archive system, with many articles extending throughout many decades.

The Guardian also has a built-in search engine that facilitates finding articles with Climate Change as the main topic and how it affects businesses and the economy directly and indirectly. Collecting the materials from the same newspaper also facilitates the analysis process as the same writers have written several articles on the same subject, and reading different articles from the same author helps to understand better his/her point of view. The Guardian Newspaper has its principles, guidelines and those nuances, although not explicit, can be understood more in-depth as the reader consults the articles with more frequency.

The author will collect several articles from this database comprising five years from 2010 until 2015. He expects to find out how the press discourses these subjects and which themes occur more often than others. Additionally, he looks for answers on how has Climate Change's importance changed within this timeframe and whether the articles' writers seem pleased or frustrated with the handling of climate issues by governments, companies, and organizations. It is expected that the figures of speech and the text intonation will vary in accordance with each author even if they agree with each other and the E.U. on this issue.

Twelve Articles were chosen as the material to be analyzed during the writing of this thesis. The articles all originated from The Guardian's Media conglomerate. The author used the keywords "Climate Change", "Sustainable", "Business", and "Economy" to look for related

articles. The first criteria for choosing the articles were that they must have been published within five years from 2010 till 2015. This choice was so that the development of climate change could be accompanied throughout several years so that the author could sense changes regarding the theme during this period. For instance, if there would be a difference in how the urgency to tackle climate change was seen at the beginning of the decade or later after a few years and for the same reason, the author chose two articles from each year, one published at the beginning of the year and another towards the end of the year to be able also to detect changes in the same year. The chosen articles are listed below grouped in chronological order:

List of Articles

2010

1. **Investors urge governments to take immediate action on climate change.**
   A group of 450 investors gathering at a UN conference in New York Urge the Global governments to sign a treaty to combat Climate Change.
   https://www.theguardian.com/environment/2010/jan/14/business-low-carbon-economy

2. **How has Dec fared in the spending review?**
   Deals with the Department of Energy and Climate Change's Spending
   https://www.theguardian.com/environment/2010/oct/20/decc-spending-review

2011

3. **Ban Ki-moon: World's economic model is 'environmental suicide'.**
   The UN's secretary-general warns that the world's current economic model will lead to an "environmental Suicide" if no action is taken to change its course.
   https://www.theguardian.com/environment/2011/jan/28/ban-ki-moon-economic-model-environment

4. **How will climate change affect rainfall?**

   This article speculates on the effects of alteration in rainfall due to climate change, with some cold areas seeing an increase in rainfall. In contrast, other areas already dry will experience drought.

   https://www.theguardian.com/environment/2011/dec/15/climate-change-rainfall

2012

5. **Why investors need to act on climate change in 2012.**

   This article states that binding agreements to reduce emissions are on the way, and those investors who wait and see can risk losing their assets and see rising risks.

   https://www.theguardian.com/sustainable-business/investors-action-climate-change-2012

6. **Business warned to prepare for catastrophic impacts.**

   PwC's Climate Change report appeals for radical change to decarbonize the global economy.

   https://www.theguardian.com/sustainable-business/blog/pwc-climate-change-reduction-business-investments

2013

7. **Climate change and poverty have not gone away.**

   While some believe that Climate Change should be put on hold because of the world's economic slowdown, the author of this article believes that on the opposite putting climate change in vogue would restore demand and growth.

   https://www.theguardian.com/business/2013/jan/07/climate-change-poverty-inequality

8. **Economic inclusion of disabled people crucial to climate change resilience**
   This article deals with an expected increase of disabled persons caused by an increase in disasters due to climate change.
   https://www.theguardian.com/sustainable-business/economic-inclusion-disabled-climate-change

2014

9. **Climate change and circular economy take centre stage at Davos.**
   This article explains the circular economy and how it can help to reduce emissions.
   https://www.theguardian.com/sustainable-business/climate-change-circular-economy-davos

10. **2015: the year businesses recognize that climate change is real**
    The writer makes a retrospective of 2014 on climate issues and predicts that 2015 will be the year when there would be consensus on climate change.
    https://www.theguardian.com/sustainable-business/2014/dec/24/2015-predictions-business-climate-change-environment-justice-future

2015

11. **Circular economy could bring a 70 percent cut in carbon emissions by 2030.**
    The author describes a successful study in Sweden where the circular economy helped to cut down on carbon emissions.
    https://www.theguardian.com/sustainable-business/2015/apr/15/circular-economy-jobs-climate-carbon-emissions-eu-taxation

12. **If airlines care about climate change, they should make everyone travel economy.**
    The author appeals to Airlines to eliminate first and business class from planes to turn air travel less appealing and help reduce carbon emissions. The Airline industry is considered one of the “largest villains” in what relates to carbon emissions.
    https://www.theguardian.com/sustainable-business/2015/dec/11/heathrow-business-travel-climate-change-paris

3.2 Reflection and Limitations of the Research

EU's environmental policy was formally founded with the European Council declaration made in Paris in October 1972. In this last decade, environmental policies have specially developed at a surprising speed. One hundred fifty legal acts relating to the environmental policy were passed between 1987 and 1994, extending environmental policy as one of the key areas within the EU. The EU's latest initiative has been the Green Deal, where the EU has developed an ambitious plan to become a carbon emissions' free zone by 2050 since the European Commission considers this as one of the century's most important issues to solve or at least mitigate, it is only natural that it would be frequently discussed at the European press.

This research aims at discovering the use of discourses and how they are portrayed at the European English language Press. According to a 2019 web ranking, the Guardian is Europe's largest English language news media making it the ideal source for European press articles (4imn, 2019). The empirical material source for the thesis was decided as the Guardian's Newspaper and Media electronic database because of its vast collection of articles that can be freely consulted using the website's search engine. The strengths of the research are the timing and importance of the theme. The author decided to focus on one single source of materials, therefore bringing out more in-depth news media and writer's opinions and discourses. The research limitations are the limited articles' sample size. There are many materials available online these days related to climate change from a high number of sources. However, the author had to narrow down the scope of the research choosing to limit the analysis for five years. Although the IPCC produced its first report in 1990, it was not until 2010 that developed countries started to seriously invest in a fund ($30 bn) to support projects aimed at "greening" the economies of developing nations to mitigate climate change; therefore, 2010 was a significant year that marked a shift from rhetorical discussion into action and for this reason the author decided to begin the collection of articles written in 2010 onwards to show more in details this change in discourse from 2010 until 2015.(UNFCCC, 2010) From 2015 onwards, climate change became more unanimously present as fewer world leaders opposed it, which became evident by the legally binding International Treaty on Climate Change signed by 196 nations at COP 21 Paris on the 12th of December 2015. (United Nations, 2015)

4 Discourse Analysis of Selected Climate Change Articles

In 2009 the United Nations Climate Change Conference was held in Copenhagen between the 7th and 18th of December; it followed the United Nations Framework on Climate Change and the Kyoto Protocol. A new framework for Climate Change 2012 was to be agreed upon there. There were many expectations involving this conference. There would be a "worldwide agreement" to limit CO2 emissions, but in the end, the outcome was just a "weak political statement" acknowledging that Climate Change is one of the greatest challenges in the world. That action should limit the global temperature increase to less than 2 degrees; the conference was considered a failure. This agreement was not politically binding, and there was no specific action plan.
Although recently, Climate Change has fallen to second place in the global concerns' list with the combat against Covid 19 rising to number one. It remains an unsolved global issue that will rise again in its eventual time.

The first article was published on the 14th of January of 2010 and had the Title "Investors Urge Government to Take Immediate Action on Climate Change". As Stephanie Taylor mentions in the book Discourse and Data, a guide for analysis, it is essential in order to analyze this article to know where it is situated; Susanne Goldberg wrote an article in the aftermath of the Climate Summit in Copenhagen (Taylor, 2001, P. 7). The author sets a strong tone in calling for political action in treaties and directives and emphasizes an apparent failure from the Summit in achieving this objective.

“Over 450 investors controlling $13tn of assets yesterday urged world governments to per-empty an international climate change treaty and take immediate action on global warming, or risk losing the opportunity to establish a clean and sustainable low-carbon economy. “

The article begins with a strong message that a large group of investors is urging that a meaningful treaty must be signed; it uses words of impact such as "immediate" or "risk" to catch the reader's attention about the paramount need to act or risk a lost opportunity which may or may not return.

"What we need most is government action both in the US and throughout the world," said Anne Stausboll, the chief executive of the California Public Employees Retirement System (Calpers) America's largest public pension fund."

The article closes with Anne Strausboll's appeal for action in the US and the world; being the head of the American's largest pension fund (Calpers) worth $205 bn assets, her opinion carries substantial weight, and she says her fund is ready to invest more in Green assets. However, they strongly require the first implementation of climate change laws.

The Next article is from the 20th of October 2010. in this article, Tim Webb evaluates the department of energy and climate change, a department created by Prime Minister Gordon Brown in 2008 to take on the major responsibilities related to climate change. The scrutiny starts from the title:

"How has Dec fared in the spending review?"

Webb evaluates the performance of the Department of Energy and Climate Change (DECC), which in her opinion did well that year even though it has gone through 30% cuts in administrative costs, promising the establishment of even a Green Investment bank to give financial support to activities that promote renewable energy, carbon capture and storage technologies.

In the second paragraph, there is a dichotomy between the ones seen as winners (The technologists and big businesses) and the losers (ordinary people who had access to grants to improve their home insulation and fuel slashed. Those renovations could have led to a reduction in electricity and oil usage and consequently fewer emissions being produced. Although there was some initial disappointment since 1 billion investment is considered a bit small compared with the initial predictions, the article closes in a very positive way Stating that although scaled down by 20% from the initial plan, the £860 million scheme to reward companies that invest in renewable energy was very welcomed.

"This is excellent news for the UK solar industry. It is exactly what the market needs in order to fulfill its fantastic potential. The outcome of today's review could not have been better," said Ray Noble from the Renewable Energy Association."

Ray Noble Was very effusive in complementing the government's strategy by using the adjective "excellent" and the expression "could not have been better" and seems quite happy with the outcome.

On the press article of Friday, the 28th of January, 2011, the article begins with strong rhetoric from Ban Ki-Moon, UN's secretary-general. Moon equates the current World model as "environmental suicide" If it is not changed. He calls for more innovation to save the planet. This thesis author's perception is that Although not revealed explicitly in the article, the change of posture from the secretary-general to end his direct negotiations' approach trying to reach a global deal in favor of being more in the background and aiming for a "broader" agenda, leaves a hidden image of action rethinking and retreat.

The president of Indonesia emphasized that they were planting millions of trees per year to preserve the rainforest, but they would not give up on their wishes to reach the same level as the developed countries. Bill Gates agreed that someone could not just tell people to use less energy than the Europeans, and a better strategy would be Family Planning. Some consider the annual meeting at Davos to be ineffective. The often-heard expression is "producing little more than hot air ", hot air meaning by a metaphor as something that does not add value besides empty words.

"I hope next year participants will return to the Swiss ski resort "and be able to say that a molecule of CO2 was actually affected by what we say and do here".

The New York Times columnists and moderator writer Thomas Friedman closed the article with this expression to signal that he wished that the following year's meeting will be able to cause a real impact on CO2 production worldwide.

The article of the 15th of December 2011 deals with how climate change will affect rainfall. Duncan Clark rights that precipitation is likely to increase 1-2% percentage per degree warming. Countries like Britain that are already wet may get even more damaging floods which can be attested by a recent study on human-made climate change of the year 2000.

Countries with dry and hot summers, such as Spain and Greece, may get even drier and hotter.

Although the tone of the whole article is entire of a catastrophe, the author keeps himself from using strong rhetoric in his words, preferring to leave the perception of the seriousness of the situation to the reader based on the numbers shown.

The article released on the 4th of January 2012, follows the COP 17 or United Nations Climate Change Conference in Durban, South Africa. Paul Simpson catches the reader's attention right at the beginning of the article with expressions such as "Firstly" and "Secondly", which helped structure his ideas quickly and straightforwardly; he starts by calling out the seriousness of climate change a threat and risks to the economy. He exhorts investors to act to protect their assets and prepare for the future since he predicts the time will come when governments reach a legally binding deal, and investors will have a short time to do the switch if they do not act now.
In the short term, it may not seem as attractive to invest in low carbon companies as fossil fuels remain an attractive investment which in turn perpetuates the problem. Paul Simon introduces the CDP or Carbon Action Initiative, where 35 investors with $7.6tn assets will pressure the largest companies in the world to implement greenhouse emissions reduction initiatives.

He concludes by stating that although 2012 is a challenging economic year for Europe and the US which he compared to a "headache", it would still be better than a "larger hangover" that would happen in the case of inaction. Those two terms are used as metaphors for pain and disease.

The next article from Monday the 5th of November 2012 written by Jo Confino has another alarming tone with the title: "Business warned to prepare for Catastrophic Impacts". The author reinforces the reputation of PricewaterhouseCoopers that is, from her point of view, "not known for scaremongering". PWC, the world's largest professional services firm, has made an annual low carbon economic index report pointing to a "catastrophic future" unless "radical action" is in place to avoid climate change. Referring to the lateness of real action, she implies that business and the governments must be prepared for a world that may

become 6 degrees warmer, caused by the global community's failure to reduce carbon emissions.

“We have passed a critical threshold – not once since the second world war has the world achieved that rate of decarbonization, but the task now confronting us is to achieve it for 39 consecutive years.”

This statement gives praise for the decarbonization that Industries implemented around the world but points to the challenge of maintaining those emission reduction levels for almost 40 years, which is the expected time to make a real impact in lowering temperature rises.
The author mentions a book called "Six Degrees: Our Future on a Hotter Planet", which gives a cataclysmic scenario even for 6 degrees warmer. The book's author Mark Lynas wrote that this level of temperature rises will be enough to turn southern Europe, Northern Africa, and the Middle East into uninhabitable areas because of the heat and dryness and that sea levels will rise so much that will cause people which he calls "environmental refugees" to abandon coastal cities, culminating in the extinction of 90% of the known species.
Jonathan Grant, Director of PwC, calls for extensive preparation for the worst-case scenario, especially for businesses that will find difficulties keeping their operations running without disturbances. The report continues underlying what needs to be changed, from a fall in fossil fuels' use to carbon capture storage technology and ending deforestation.

The report mentions that settling for “halfway” fuels such as gas is not the best solution as its low prices may slow down the implementation of fossil-free renewable energy projects. It concludes raising uncertainty about the future since the current levels of emission reduction are no near what is required. Therefore, there will be a period of volatile commodity prices which could affect businesses.

An article from the 7th of January 2013 written by Joseph Stiglitz deals with economic and climate problems. He mentions that Global Warming is severe and should not be thrown in the background overshadowed by the economic crisis that affected Europe and North America.

“Just as the Great Depression arose in part from the difficulties in moving from a rural, agrarian economy to an urban, manufacturing one, so today's problems arise partly from the need to move from manufacturing to services.”

In this sentence, Joseph compares the economic difficulties felt in a great depression, which developed societies from agrarian to urban, to the initial struggle that transitioning to a carbon-free society may cause, but implicit in this comparison is that the urban society was more developed and produced more wealth to societies in general than the agrarian society. The author talks about global imbalances and a need for Global surplus countries like Germany or China to increase consumption. In contrast, the United States needed to do the opposite and increase domestic savings to reduce the trade deficit.

Stiglitz sheds light on the increase in inequality worldwide, which, now during the worldwide economic crisis, has been affecting even the large American middle class exposing "the myth" of equal opportunity for all. He believes that growing inequality is a strong reason for the economic slowdown and a system that does not deliver to most citizens, which causes faith in democracy to crumble.

On the positive side, the gap between developing and developed countries has narrowed during the last decades. However, one group is one of the least developed countries (most located in Africa or Southeast Asia), whose developing gap has increased towards the other economies (UNCTAD 2020).
Stiglitz closes his argument by saying that we should take this opportunity of low demand to invest in the future, trying to at the same time tackle Global warming, inequality, and the very needed structural change.

The article dated 6th of November 2013 brings an exciting view of the correlation between Climate Change and disabilities. The title of the Article is Economic Inclusion of Disabled People, key to Climate Change resilience. The Author, Elisabeth Braw, introduces to us the story of Aurelius Marc, a Haitian and family father who became disabled when a wall fell on him during an earthquake. If he did not have external help, he would have to resort to begging to survive, but with the help of a prosthesis, he can continue a working life as a motorbike Taxi driver. Arup Banerji, director of the World Bank Group, states that the economic inclusion of individuals with disabilities will bring positive benefits to both the individual as the society. As for attitude changes in the developing world, Microfinance institutions are being trained to see the individual's potential and not the disability.

This change of attitude will be crucial in the future as the World Disaster Report predicts that by 2050 natural disasters will affect 200 million people. For every child that dies, three will end up with disabilities. The author closes the article with another life example, that of Zephyr Marchant, who lost his arm during an earthquake and now runs a market in Port-Au-Prince. She says that thanks to the shop, she can support her family and even buy a TV. The use of real successful life stories raises the reader's sympathy and appeals for his or her support for the cause, which is the empowerment of disabled minorities. The Tolerant society is based on rationality, social justice, and caring feelings for each other. Those characteristics could undoubtedly help disabled people succeed in the developing world (Wetherell et al. p. 209).

An article from the 25th of January 2014, presents the fourth day at the Davos Climate conference. Jo Cofino and Caroline Holtum write from Davos positive feedback from Paul Polman, Unilever's CEO, stating that they had achieved more during that year's conference than the years before. George Kell, executive director of the UN Global Compact, emphasizes that Environmental issues have gone up both in public as well as private meetings. He mentions that there are still important issues to tackle, such as what he calls “fence-sitters", the policymakers who are mostly interested in their country policies as well as the financial markets, which are so short term focused that they hold back companies to invest in projects which would require long term investments. He concludes his speech by praising the 400 companies running under the “caring for climate" logo. They will assume responsibility to control their carbon emissions but say that this challenge can only be won when most companies support sustainable practices and not hinder them.

On the 21st of February 2014, William Macdonough defined Global warming as:

"one of the most serious and complex challenges facing humankind."

This is a very impacting expression; it shows how important and challenging his view is the challenge that Climate change represents. Jim Yong Kim calls 2014 "the year of climate action", asking for a $50bn green bond market by 2015. This is one year where is evident much involvement in climate change activism from Politicians and even large corporations.

Nike and Coca-Cola called for more corporate and governmental action. Ban Ki-moon UN's secretary General praised WEF (the world economic forum) climate change focus as an excellent introduction to UN's climate summit that was to take place in Peru, Christiana Figueres (UN's top climate official) wrote:

"climate change is now right back up there among the top concerns of business and political leaders."

This expression shows her joy and hopes that 2015 would be a year of accomplishments for sustainability and the climate. The circular economy is presented as the best solution for scarcity. To avoid waste, biomaterials should return to earth, and technical materials are recycled endlessly by the Industries in perpetual cycles. The circular economy is the most critical catalyst for Global Change following the WEF's and Ellen MacArthur's foundation guidelines. Hanna Jones from Nike remarks to compete in Latin is "Competere", meaning to "strive together ", describing how athletes train together to win the Olympics. She closes her speech with:

The sustainability challenge "pushes us to innovate in a world where there is no finish line."

With this metaphor, she compares the continuous pursue of development and improvement with a race without an end. Al Gore closed the Davos session with a remark from Mahatma Gandhi:

"First they ignore you, then they ridicule you, then they fight you, and then you win."

This expression well defines the struggle to prove that climate change was real that some leaders such as Al Gore passed through in the early 2000s.

The next article is from the 24th of December 2014 written by Aman Singh. The title is 2015: The year businesses recognize that climate change is real. This title paints a very positive image of 2015 even before the year has begun based on many developments in 2014. One of those developments was a historic agreement between the United States and China where both countries committed to lower emissions and invest in carbon-free energy.

Singh calls it "water-energy nexus" and "resources dilemma" because the Industries began to feel the pressure of Climate Change. People began connecting changing climate with other issues such as poverty, urbanization, economics, and development, which were previously seen as separate issues. He Divides the Article into five other subparagraphs. The first one is "More businesses recognize that climate change is real". Many businesses and organizations began for the first time to release reports such as the S&P 500 Climate Leaders report classifying enterprises according to how well they are prepared for climate shifts and market volatility. Some companies such as Microsoft have put an internal price on carbon while others match emissions with performance, health, and urbanization.

The second subparagraph with the title "Companies Align their Strategies with Sustainable Development Goals. The UN's Millennium Sustainable Development Goals have shifted from general goals like reducing poverty and increasing hygiene to more integrated ones like dignity and prosperity for all. For the first time, businesses are being called to support and be active in negotiations, which shows a new knowledge that determining a joint path will also require the private sector. One example of how to align business goals with the UN's goals is, for example, the business considering preparation for hurricanes, floods, and loss.

Subparagraph 3, Businesses switch from Advocacy to Activism. In this section, we see Company's CEOs, such as Apple's Tim Cook, performing a Climate themed speech advocating more action on climate change, as he wanted Apple to be one of the forerunners on climate issues. It is written that Paul Polman Univeler's CEO has spoken “often and loudly” for businesses to align their mission and goals to action on climate and other issues, symbolizing continuous and visible activism.

Polman predicts that rhetoric and action align in boardrooms, and more leaders will come out and speak about sustainability will become more common as they start to see this is the next trend for the next 25 years.
Subparagraph 4 mentions the future supply chain disruptions and how to prevent them, which the author sees as forecasting decades, not years into the future.

The last subparagraph 5's theme is focused on Future-Proofing. Futureproofing means planning the next year to assure the long-term viability of the company or its role as a contributor, consumer, employee, leader, etc.
The author closes the article with this expression:

"And remember, joy is contagious. Nevertheless, so is scepticism. Stay clear. Steer carefully – and lead gracefully – onwards."

He carefully chose his words to demonstrate that both positive attitudes, “joy" and negative attitudes ",, scepticism" are contagious and that we must remain moving carefully and forward not to fall under scepticism.

From early 2015 to the 15th of April, this article touches on the subject of the circular economy once again. This Club of Rome's study stipulates that the circular economy could create thousands of jobs and reduce Swedish carbon emissions by 70%. The business community often looks at climate policies as diminishing competitiveness but pushing for the advancement of the circular economy could help both the climate and the job market. Included in the list of measures there are, for example: strengthening recycling and reducing waste, making the circular economy a core part of the EU's climate policy, smart taxation, taxing recycled materials less while increasing taxes on consumption.

Studies of the Dutch and Spanish economies are expected to have similar results as in Sweden, where the circular economy did not hinder but promoted competitiveness and growth. Man must operate within a complex of dynamic, interrelated systems, of which he is an integral part. Man needs to develop an ecosystem approach to the management of this world, and only this way he will be able to live in harmony with nature (Harré, 1998, P 104).

The next article is from the 11th of December 2015, and it calls on changes in international air travel. In 2015, business travel was booming, and a top 10 company’s travelers “list of shame” was produced with company’s names such as Deloitte, Accenture, ExxonMobil. Andrew Simms sees no change in practices for airline travelling, even with environmental discourse all around. Warren Buffet, for example, has a fleet of more than 700 planes which is more than Lufthansa.

Renewable fuels are not currently replacing fossil fuels, but just adding to the emissions and consumption of energy, and the easiness of people establishing relationships over the internet will only increase people's meeting face to face.
There seems to be no slowdown in airport capacity or planes being used, so the author closes the article with this opinion:

"If they do not want demand reduced, but think that climate is important, they should remove business and first-class seats from planes and make everyone travel economy, that would significantly reduce the carbon emissions from their planes."

The idea that single class planes could reduce demand for flights is accurate in the sense that it would make it more uncomfortable and jammed to sit on the plane, discouraging some to travel. At the same time, the aeroplane's capacity would also increase and carry more people.

Recurring Themes (re: Appendix 1)

The author of this thesis has divided the discourse ideas present in the articles into six major themes concerning climate change abbreviated as follows: ADATOCLICHA= Adapting to Climate Change; NEOFIMAC = Need of Immediate Action (to prioritize); NOENHASBEDO = Not Enough Has been Done; CLEREEN = clean/renewable energy BUAECOBEFOAC = Business and Economy's benefits for acting BUAECOBEFONAC = Business and Economy's loss for non-acting or doing too little. Those Themes were chosen for being perceived as the most relevant common recurring themes appearing in most of the articles.

Registering recurring themes can be a way to scrutinize the discourse within a single article and trace a connection pattern between this and other articles that exhibit similar themes. This way one can find out which themes have been more or less often employed in discourses.

Common Themed groups (re: Appendix 2)

The author chose to place the articles into chronological order to detect better how changes in discourse varied as the years passed. However, another possibility would also be to order the articles by common themed groups. Five common themed groups were proposed being listed as:

a) International Climate Conferences: This has the largest group of articles as it comprises four of the twelve articles. Those were the articles that referred directly to high-level meetings that took place at International Climate Conferences.
b) Investments in Green Tech: Two articles belonged to this group, and both dealt with how European (British and Swedish) governments decided to invest in Green Tech.
c) Climate Change's Physical Impact: The two articles that belonged to this group highlighted possible catastrophic future impacts that climate change may cause in Europe and worldwide. Some examples of catastrophes that are connected to climate change are tornadoes, hurricanes, floods, drought, and extreme heat.
d) Climate Change's Effects in Poor Countries: Those two articles report different levels of consequences climate change will have in developing countries depending on how citizens of those countries are encouraged to contribute and participate in their respective economies.
e) Business and Climate Change: This last subject also contains two articles showing how businesses are planning or not planning (although they should) to modify their strategies to help mitigate the adverse effects of climate change.

Common themed groups give a possibility to analyze discourse from the micro into the macro-level, by categorizing the articles in accordance with their overall main theme, also revealing which theme(s) have journalists more or less frequently written about in the news media.

5 Conclusions

Twelve articles were analyzed comprising five years from 2010 until 2015 have shown recurring themes related to Climate Change. The most present theme was the need for immediate action from the companies and police maker's side, which appeared in all 12 articles. The second most recurring theme was the Business loss for non-acting, which appeared in nine articles, followed by business and economy's benefit for acting in eight articles. The idea that not enough has been done to curb climate change is present in seven articles. In comparison, the two most minor popular themes have been clean and renewable energies mentioned only five times and the adaptation to climate change which was a visible theme only in three articles from the sample.

The analysis of the articles revealed that Climate Change is a theme that gradually grew in importance between 2010 and 2015. At the beginning of the decade, there was more scepticism around whether climate change was confirmed and/ or human-made. These are doubts which were reduced as the years passed by, also resulting in an increase in climate activism not only from some politicians and ordinary citizens but also from business leaders who are not concerned only about global warming but also about what type of reputation their business will have in the future in what concerns their sustainability and carbon footprint. When articles were grouped into common themed groups, the most common theme was International Climate Conferences. The reason behind it is that most high-level international policy discussions and decisions occur between country representatives meeting international climate summits. Other familiar themes to a lesser degree within the articles were Investments in Green Tech, Climate Change's Physical Impact, Climate Change's effects in Poor Countries and Business and Climate Change.

The results have indicated that an urgent need for action is still required in order to cut down emissions and try to revert or at least mitigate the warming of the globe. The journalists seemed to be quite engaged with the subject. They often used expressions warning about the seriousness and importance of the theme, explaining in detail why policymakers and businesses needed to act and in some opinions even to overrule the whole current economic system implementing a greener and more sustainable one to save the future of the planet.

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Appendix 1: Table of Recurring Themes

Recurring Themes	ADATOCLICHA	NEOFIMAC	NOENHASBEDO	CLEREEN	BUAECOBEFOAC	BUAECOLOFONAC
1		X	X	X	X	X
2		X		X	X	X
3		X	X			X
4	X	X	X			
5		X	X	X	X	X
6	X	X	X	X	X	X
7		X	X		X	
8	X	X				X
9		X			X	X
10		X			X	
11		X				X
12		X	X	X	X	X

Abbreviations:

ADATOCLICHA= Adapting to Climate Change

NEOFIMAC = Need of Immediate Action (to prioritize)

NOENHASBEDO = Not Enough Has been Done

CLEREEN = clean/renewable energy

BUAECOBEFOAC = Business and Economy's benefits for acting

BUAECOLOFONAC = Business and Economy's Losses for not acting

Appendix 2: Articles Grouped by common themes

a) International Climate Conferences

13. **Investors urge governments to take immediate action on climate change.**
A group of 450 investors gathering at a UN conference in New York Urge the Global governments to sign a treaty to combat Climate Change.
https://www.theguardian.com/environment/2010/jan/14/business-low-carbon-economy

14. **Ban Ki-moon: World's economic model is 'environmental suicide'.**
The UN's secretary-general warns that the world's current economic model will lead to an "environmental Suicide" if no action is taken to change its course.
https://www.theguardian.com/environment/2011/jan/28/ban-ki-moon-economic-model-environment

15. **Climate change and circular economy take centre stage at Davos.**
This article explains the circular economy and how it can help to reduce emissions.
https://www.theguardian.com/sustainable-business/climate-change-circular-economy-davos

16. **Why investors need to act on climate change in 2012.**
This article states that binding agreements to reduce emissions are on the way, and those investors who wait and see can risk losing their assets and see rising risks.
https://www.theguardian.com/sustainable-business/investors-action-climate-change-2012

b) Investments in Green Tech

17. **How has Dec fared in the spending review?**
Deals with the Department of Energy and Climate Change's Spending
https://www.theguardian.com/environment/2010/oct/20/decc-spending-review

18. **Circular economy could bring a 70 percent cut in carbon emissions by 2030.**
The author describes a successful study in Sweden where the circular economy helped to cut down on carbon emissions.
https://www.theguardian.com/sustainable-business/2015/apr/15/circular-economy-jobs-climate-carbon-emissions-eu-taxation

c) Climate Change's Physical Impact

19. **How will climate change affect rainfall?**
This article speculates on the effects of alteration in rainfall due to climate change, with some cold areas seeing an increase in rainfall while other areas already dry will experience drought.
https://www.theguardian.com/environment/2011/dec/15/climate-change-rainfall

20. **Business warned to prepare for catastrophic impacts.**
    PwC's Climate Change report appeals for radical change to decarbonize the global economy.
    https://www.theguardian.com/sustainable-business/blog/pwc-climate-change-reduction-business-investments

d) Climate Change's effects in Poor Countries

21. **Climate change and poverty have not gone away.**
    While some believe that Climate Change should be put on hold because of the world's economic slowdown, the author of this article believes that on the opposite putting climate change in vogue would restore demand and growth.
    https://www.theguardian.com/business/2013/jan/07/climate-change-poverty-inequality

22. **Economic inclusion of disabled people key to climate change resilience**
    This article deals with an expected increase of disabled persons caused by an increase in disasters due to climate change.
    https://www.theguardian.com/sustainable-business/economic-inclusion-disabled-climate-change

e) Business and Climate Change

23. **2015: the year businesses recognize that climate change is real**
    The writer makes a retrospective of 2014 on climate issues and predicts that 2015 will be the year when there would be consensus on climate change.
    https://www.theguardian.com/sustainable-business/2014/dec/24/2015-predictions-business-climate-change-environment-justice-future
24. **If airlines care about climate change, they should make everyone travel economy.**
    The author appeals to Airlines to
    The author addresses the airline Industry, which is one of the most prominent villains in what relates to carbon emissions.
    https://www.theguardian.com/sustainable-business/2015/dec/11/heathrow-business-travel-climate-change-paris