The green growth paradigm and EU climate policy: economic gain as priority

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Introduction

Climate change is an issue keeping many millions of people busy these days. More and more actors are becoming aware of climate change's acute and dangerous nature every day. There is much discussion on our current climate policy, with people defending or critiquing our climate policies. The literature tells us that many of our current climate goals rely on an overly optimistic combination of economic growth with responsible climate change prevention (Hickel, 2019). An important puzzle is whether or not individual international actors also overvalue the importance of this economic growth. If they do, what is the effect of this on their climate policies? Perhaps this overvaluing of economic growth forms a fundamental problem running throughout all our attempts at climate change prevention. This puzzle is one that will be looked at and partially solved throughout this research paper.

Another yet unanswered question is how our climate policies are formed. Are they simply a result of developed nation's geopolitical goals? Is it perhaps a result of intergovernmental agreements and accords regarding climate policies? There is also a gap in the literature to be found on this subject. This paper will discuss one such possible cause of climate policy formation: the green growth paradigm. The green growth paradigm is currently the most important paradigm, because most international organizations have adopted it. For example, the World Bank, the OECD, European Commission and United Nations currently employ it (European Commission, 2011, OECD, 2011, UNEP, 2011). This second actor, the European Commission, is most important. Since this is the actor that will be studied for this thesis, it is important that it has adopted the paradigm this thesis will investigate. For the purposes of this research, the World Bank's definition of green growth will be applied (World Bank, 2012). This definition is as follows:

> '[E]conomic growth that is efficient in its use of natural resources, clean in that it minimizes pollution and environmental impacts, and resilient in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters.'

The reason that this definition has been picked, is that it aptly shows the balance at the core of this paradigm: economic growth versus climate change prevention. On the one hand, green growth is all about economic growth. On the other hand, this growth must be achieved in such a way and to such an extent that it minimizes environmental impacts (World Bank, 2012). Since

this balance lies at the base of this research, it is important that it is emphasized in the utilized definition of green growth. The paradigm, in essence, relies on a combination of two factors: economic growth and climate change prevention. An issue widely discussed in the literature, is whether or not these two factors can actually be combined (Hickel, 2019). This is one of the questions that will be answered in this research paper. Through the analysis of several past researches, it will become clear that many institutions are unrealistically optimistic when it concerns this combination.

The connection between the green growth paradigm and the European Union's climate policy will be drawn through the following research question: how does the green growth paradigm influence climate policy formation under the 2019 Von der Leyen European Commission? This question will be answered in two steps. First off, EU policy pieces will be searched on green growth paradigm keyphrases. The amount of keyphrases in these policy pieces will determine the paradigm's influence. In the second step, a comparison will be made between mention of economic growth and green growth's climate policy counterparts, like the Paris Agreement.

The structure of this research paper will be as follows. Firstly, a literature review on literature regarding the green growth paradigm will be presented. This will provide some much-needed context for this research paper. Secondly, a theoretical outline will be made for the empirical part of this paper. This part of the thesis, theories from IR literature will be cast into hypotheses. Thirdly, the method of the empirical section of this paper will be described. The methods section will provide clarity on case selection, data selection and conduction of the research. Fourthly, the results of the quantitative content analysis conducted in this research paper will be presented. Fifthly, a discussion will provide insights in the meaning of the results presented in this paper. Sixthly and finally, a conclusion will provide a summary of this thesis' findings, and provide both practical and theoretical implications for the field of climate policy research.

Literary background

This part of the thesis will have several goals. First of all, it will show the current debate on the green growth paradigm. At the same time, it will highlight the discussion surrounding the feasibility of a combination of responsible climate policy with economic growth. Finally, it will show the gap in the literature this thesis is attempting to fill.

Since the adoption of the green growth paradigm by many major institutions, like the EU and the UN (European Commission, 2011, OECD, 2011, UNEP, 2011), many analyses of this paradigm have been conducted. Before discussing other author's findings on this matter, it is important to look at the justification and description these actors gave when adopting the green growth paradigm. The OECD published a book on this in 2011. In this book, the OECD emphasized the importance of innovation at the core of green growth (OECD, 2011, p. 51). They state that innovation and technological advancement ultimately will be key to combining responsible climate policy with economic growth. They give countries and international organizations several policy instruments to help foster innovation (OECD, 2011, pp. 53-54). First of all, actors should invest in research & development, and incentivize innovation through monetary rewards. Providing funding for starting green innovation companies is also vital, because these companies often struggle to finance themselves. Finally, setting clear standards and well-designed regulations for green innovation might also prove effective. The G20 top of the world's largest economies underlines that the private sector should be more involved in the formation of climate policy (G20, 2016). The reasoning for this is that the private sector brings a lot of economical resources and expertise to foster aforementioned technological innovation and efficiency increases.

All in all, the OECD and G20 heavily emphasizes the importance of technology and innovation throughout their entire book (OECD, 2011; G20, 2016). The question is whether or not the OECD is emphasizing the correct factors. Perhaps this future innovation is simply used as a mechanism to protect themselves from having to form responsible climate policies. Perhaps international actors attempt to put off responsible climate policy because people believe our current failures will be rectified in the future with greater efficiency through innovation and technological advancement. Therefore, this body of literature clearly shows the OECD's intentions on climate policies. It does expect to rely heavily on technological innovation in order to be able to achieve economic growth whilst fighting climate change. This again points to the fact that the OECD has in fact adopted the green growth paradigm as defined in this article. It does not, however, demonstrate whether or not these goals are combinable.

This reflection is supported by Lorek and Spangenberg. They state that assumptions about future technologies and the efficiency caused by them are widely optimistic (Lorek & Spangenberg, 2014, p. 35). Through a factor analysis they find there is no realistic way to support economic growth at 3% annually while maintaining global warming below 2 degrees

Celsius, as stated in the Sustainable Development Goals (UN, 2015). To reach this conclusion, the authors used an old and proven method of factor analysis for future technological innovation. They use the I = P*A*T equation, first posed by Ehrlich and Holdren (1971, pp. 1212-1216). In this equation, I represents total environmental impact, constructed from three components: population (P), affluence (A) and technology (T). Using current population growth and global GDP projections by the OECD (2012), the authors surmise that a 130fold increase in efficiency is required by 2050 (Lorek & Spangenberg, 2014, p. 35). This increase would be required to remain below 2 degrees Celsius in global warming, and to maintain the minimum of 3% global economic growth per year. In summary, the authors conclude that relying on future innovations and advancements and expecting this to limit climate change through the green growth concept is unrealistic (Lorek & Spangenberg, 2014, p. 42). According to the authors, green growth seems like a diversion to pretend climate change can be inhibited without making serious changes to our economy and society.

A body of research by Hickel further supports this argument in two different research papers (Hickel, 2019; Hickel & Kallis, 2020). In his first article he disproves the feasibility of the Sustainable Development Goals (Hickel, 2019, pp. 880-882). The eighth Goal states that the UN aims at a global economic growth of 3% while also limiting global warming to a maximum of 2 degrees Celsius. This Goal hinges on the effectiveness of a concept called ‘decouplage’. Decouplage entails decoupling resource use and carbon emissions from economic growth. This is supposed to happen through innovation, leading to efficiency increases (Hickel, 2019, p. 875). Increased efficiency means more economic output for less carbon emission and resource use. According to the UN, this decouplage should take place at 1% per year in order to achieve all SDGs (UN, 2015). When calculating, however, Hickel found that the actual decouplage requirement floats around 6.88% yearly for resource usage, and a decouplage of 7.29% yearly for carbon emissions (Hickel, 2019, pp. 876-877). Therefore, Hickel concludes that the SDGs are unfeasible, as they are off the mark sixfold concerning required amounts of decouplage.

After disproving the Sustainable Development Goals, Hickel searches for a feasible green growth strategy alternative, together with Kallis (Hickel & Kallis, 2020, pp. 469-486). They find that “the Paris Agreement rel[ies] heavily on negative emissions technologies that are either unproven or dangerous at scale” (Hickel & Kallis, 2020, p. 480). However, this does not mean the Paris Agreement goals are impossible as a whole. The authors find that with very aggressive carbon mitigation strategies and economic growth of only 0.45% annually, a

maximum global warming of 2 degrees Celsius is within reach (Hickel & Kallis, 2020, pp. 480-481). In this same section, the authors also conclude that a model with a maximum global warming of 1.5 degrees Celsius is simply infeasible without shrinking the economy. The 2 degree mark seems the only one to be aimed for at this point. So even though Hickel is very negative about one of green growth's flagships, the Sustainable Development Goals (Hickel, 2019), he later finds that sustainable climate policy and economic growth can actually be combined, although not to the same extent as laid out in the Sustainable Development Goals. An important note however, is that while possible, these projections are not realistic. The projections used by Hickel and Kallis require an immediate and radical change in all climate policies, global cooperation and economic dedications. These radical changes were also required immediately when the research was being conducted, over a year ago at this point (Hickel & Kallis, 2020, p. 480).

Research from a more economic perspective also leads to the conclusion that there is no reliable presumption that economic growth and climate change prevention can be combined in an effective manner (Smulders, Toman & Withagen, 2014). In their conclusions, they state that "[t]here is no general presumption that longer-term environmental sustainability can be realized with minimal impacts, or even positive spillover effects" (Smulders, Toman & Withagen, 2014, p. 27). This statement challenges the very basis of the green growth paradigm. The paradigm is built upon the assumption that sustainability can be achieved in combination with economic growth, and spillover between economic and technological advancements and more efficient resource usage can be achieved. Despite these negative statements, the authors also offer possible ways in which the green growth paradigm can be combined with climate change prevention (Smulders, Toman & Withagen, 2014, pp. 28-29). In the past, research has shown that there are certain roadblocks to pricing goods in such a manner that it promotes more efficient resource usage and/or technological advancements (Aalbers et al., 2009). Despite these roadblocks, the authors believe that so-called environmental pricing might be crucial to achieving some sort of positive spillover between climate change prevention, technological innovation and economic growth. This environmental pricing would entail increasing the prices of certain carbon-intensive goods, to promote new production strategies with less, or even zero carbon emissions (Smulders, Toman & Withagen, 2014, p. 28).

The above articles represent the body of literature critiquing the green growth strategy. Unfortunately, the literature is very one-sided in this regard. Many authors criticize the effectiveness of green growth, and prove in different ways why green growth's strategy is overly optimistic or simply infeasible. This body of literature thereby clearly highlights a major problem with the green growth paradigm. While this is a critical conclusion, it appears as if the literature in this field has skipped a step. Many researchers have devoted their time and research papers to proving why the green growth paradigm might prove problematic, but none of them have researched how the green growth paradigm demonstrably influences actor's climate policies. There is no such body of literature investigating the influence of the green growth paradigm on climate policies. This is however a key ingredient of this field. If the green growth only lightly or not at all influences climate policies, this would question the importance of research on the green growth paradigm. This makes the importance of the above literature twofold, concerning this research paper. Firstly, it highlights the importance of this research paper. It once again underlines its importance as filler of a major gap in the field.

Worthwhile literature on a second topic concerning green growth has also been written. This body of literature is concerned with the EU's position in global climate negotiations. Although not directly mentioning the green growth paradigm, these authors promote effective climate policy through innovation and a 'first-mover' strategy (Karkatsoulis et al., 2016). This strategy entails taking a leading position in effective climate policy to better be able to convince other countries to adopt the same policies. What connects these authors to the green growth paradigm is their focus on technological innovation. A combination of climate change prevention and economic growth are the centerpieces of the green growth paradigm (Hickel, 2019). These centerpieces are connected through the efficiency increases caused by technological innovation. Therefore, innovation plays a role of utmost importance in the green growth paradigm.

As mentioned above, the piece written by Karkatsoulis and colleagues (2016) is central within this body of literature. Without directly mentioning the green growth paradigm, its implications certainly push the EU towards a green growth centered policy approach. The first-mover strategy proposed in this article is centered around fostering innovation and an ahead-of-the-curve climate policy. Indirectly, these authors are very positive about the technological aspect of the green growth paradigm. They believe their first-mover strategy will prevent loss of a part of Europe's GDP, and will prevent excessive economic damage caused by climate change

and climate change policy (Karkatsoulis et al., 2016). This article by Karkatsoulis and colleagues is not the first research on this topic. The first-mover strategy has also been endorsed in a paper by Morlot et al. (2005) and one by Schunz (2014).

These articles are relevant to this paper's research question, because they tie the green growth paradigm to the European Union. Although none of these articles directly prove that the EU utilizes the green growth paradigm, it shows that the EU might profit from a green growth strategy. This makes it very plausible that the EU does in fact use the green growth paradigm when forming its climate policies. It provides a theoretical basis to assume that the European Union might prove a good case study to investigate the connectedness between the green growth paradigm and international actor's climate policies.

The articles discussed in the above chapter represent the totality of the current body of literature on the green growth paradigm. It has become clear that there is a lot of criticism surrounding the feasibility of our current climate policy, and maybe even the green growth paradigm as a whole (Hickel, 2019; Hickel & Kallis 2020; Smulders, Toman & Withagen, 2014). This large body of literature shows that we might need to look for a different climate policy or climate paradigm. Although these articles clearly show what might be wrong with our current climate approach, they are all lacking in one aspect: they don't explain the way in which the climate paradigm influences our climate policies. If we want to change the way we make climate policies, or the social constructions on which our climate policies are based, it is of key importance that we are aware of how these constructions influence our climate policy. Without the 'how', it is very difficult to effectively change our international climate approach. Therefore, this research paper will attempt to prove that the current climate paradigm influences our climate policies in a very direct way, which is an underexplored avenue until now.

Theoretical outline

For the purpose of this thesis's research, a constructivist approach will be utilised. The empirical part of this research paper is centered around a quantitative content analysis of an international paradigm. Paradigms heavily rely on the social context of the current climate negotiations, and past climate policy behavior. Since constructivism is focused on social context, meaning and social constructions (Hurd, 2008), it will best be able to answer a research question based on a socially constructed paradigm. Other approaches in the studies of

international relations (IR), for example realism, generally focus on materialism, and completely or partially dismiss the importance of paradigms and social context in IR. Therefore, a constructivist viewpoint is the best basis for this body of research.

Wendt, one of the founding fathers of constructivism, stated that actors will always act towards other objects in such a manner that seems appropriate to them through the meaning the object has to them (Wendt, 1992). Since the green growth paradigm has been adopted by such a wide range of actors, like the OECD, UN and EU (European Commission, 2011, OECD, 2011, UNEP, 2011), the green growth paradigm must have extensive influence on the meaning actors give to their climate policy. This means it is to be expected that the green growth paradigm would have a significant influence on any actor attempting to formulate climate policy. Therefore, when an actor produces climate policies, this actor should be heavily influenced by the current leading paradigm concerning this policy, because this paradigm has been giving meaning to the policy area on a global scale. Furthermore, several more recent authors have also connected the green growth paradigm to several actors' climate policies. Hickel (2019) mentions how the UN uses the green growth paradigm to form its current Sustainable Development Goals, and Karkatsoulis et al. (2020) show us how the European Union also utilizes the green growth paradigm. This combination of a foundation from older constructivist works with current literary relevance leads to a hypothesis in which the green growth paradigm is expected to heavily influence the EU's climate policies.

H1: international actor's climate policy papers are heavily tied to the green growth paradigm.

For the second hypothesis, the model posed by Anderson and Bows (2011) will be used. In their article, these authors manage to condense all justification for actors' climate policies into five central questions (Anderson & Bows, 2011, p. 39). First: what delineates dangerous from acceptable climate change? Secondly, what risk of entering dangerous climate change is acceptable? Thirdly, when is it reasonable to assume global emissions will peak? Fourthly, what reduction rates in post-peak emissions is it reasonable to consider? Fifth and finally, can the primacy of economic growth be questioned in attempts to avoid dangerous climate change? For the formation of this research's second hypothesis, the last question from this model will be singled out. This question is extremely relevant because of the above mentioned heavy debate surrounding the feasibility of economic growth in combination with responsible climate policy. Combination of these two turns out to be only minimally possible, if at all. Therefore,

it is important to investigate whether major international actors still rely heavily on the combination of these two for its own climate policies. If this turns out to be the case, perhaps their climate policies should be updated or even reconsidered as a whole.

According to several authors, climate change policy and economic growth are being combined at an unfeasible rate (Hickel, 2019; Hickel & Kallis, 2020; Lorek & Spangenberg, 2014). This means that actors are generally way too optimistic when it comes to the extent of this possible economic growth. The fact that many green growth development plans, like the European Green Deal and Sustainable Development Goals, still heavily rely on the combination of these two means actors must emphasize their plan's economic potential to an unrealistic extent. Therefore, it is to be expected that many countries will emphasize possible economic or societal gains when expressing their climate policy to the public. This leads to the second hypothesis:

H2: when sharing their climate policies with the public, actors will emphasize potential economic and societal benefits over climate agreements and policy.

The combination of these two theoretical components will lead to one comprehensive answer to this paper's research question. The outcome of the first hypothesis will prove or disprove the importance of the green growth paradigm in our current climate policies. A positive outcome of this hypothesis will allow the conclusion that the green growth paradigm is an essential part of the climate policies international organizations form. In combination with the second theory, this research paper will then show whether climate policy formers fall into a widely spread fallacy discussed by several authors: the optimistic assumptions about the combination of economic growth with climate change prevention. Of course, both parts are essential for a weighty conclusion. Solely proving the fact that the green growth paradigm influences our climate policies holds no meaning, if it is not clear what this effect entails. On the other hand, proving that climate policies creators are overly optimistic about potential economic growth combined with responsible climate policies has no impact by itself. Perhaps these policy creators do believe in this fallacy, but if this fallacy has no significant impact on the way they create their climate policies, this fallacy does not have any practical impact. For this reason, conclusively answering this paper's research question will require positive test outcomes for both hypotheses.

Method

Case selection

First of all, it is important to explain why the decision has been made to analyse the EU's climate policy. In the end, the goal of this paper is to draw conclusions on the effect of the green growth paradigm on global climate policy through the EU. This generalizability will come from the fact that the EU represents a highly influential variable on the topic of climate change policy. Mainly, the EU's internal market is the largest in the world (EU, 2020). Being estimated around 3 trillion USD, the European internal market sizes up at over 1.5 times the size of the USA's internal market. Therefore, green growth's influence on the EU's climate policy represents the largest influence on the world's climate policy any one case could present. Furthermore, the EU runs a press corner which publishes all statements and speeches made by its main governing bodies and individual members. This makes it very practical to study the EU. It also provides more certainty that no speeches or statements will be overlooked due to inaccessibility.

Next, the decision for Von der Leyen's commission will be justified. There are a few reasons the 2019 von der Leyen commission is the best choice for this thesis. First of all, the green growth paradigm is quite recent, with most institutions adopting it around 2011 for the first time (European Commission, 2011, OECD, 2011, UNEP, 2011). The World Bank's definition of green growth only dates from 2012. Therefore, it is required to analyse a recent Commission. The von der Leyen Commission turns out to be a better choice than other recent Commissions, because it is the most active Commission when it comes to climate policy. The European Green Deal is one of the main points of Von der Leyen's policies (European Commission, 2021). This Green Deal is structured around the current green growth paradigm, making use of an economically beneficial strategy to combat climate change. In her green deal strategy, Von der Leyen mentions the importance of a technologically modern economy, a resource-efficient society and a competitive economy. These three terms are all related to the green growth paradigm as defined in this article. This explicit green growth strategy makes Von der Leyen's Commission a perfect candidate for research regarding the green growth paradigm.

Data selection

Furthermore, some explanation is required as to why this paper looks at the European Commission's policy pieces to analyse the EU's climate policy. This choice is, at its core, very straightforward: the Commission is best suited to answer this paper's main research question. It makes for a better choice than the European Council and the Council of the EU, because these councils are made up of representatives from their respective member states. Therefore it is difficult to discern between actual 'EU' policy, and policy that actually came from one or more of the member states. One can never be sure whether a representative is speaking with the EU's best interests at heart, or with their represented member state's interest at heart. The Commission's members are only supposed to represent the EU, not individual member states. Therefore this seems like the best choice to analyse the EU's climate policy. The Commission takes priority over the European Parliament, not only because the Parliament is also made up of member state's representatives, but also because the Parliament does not have to do with policy formation per se. The European Parliament's main goal is to supervise the work of the Commission, and vote on the adoption of policies formed by the Council and Commission (European Parliament, 2021). Therefore, Parliament is more involved in the ratification of EU policy than the formation of EU policy. Since this paper is aimed at researching the influence of green growth on policy formation regarding climate change, the European Parliament does not suit our criteria.

Method of analysis

For the purpose of this thesis, a content analysis will be conducted on several press releases, statements of the 2019 Von der Leyen Commission. The period analysed for this paper will range from the first of December 2019 to the tenth of November 2021. The policy pieces analysed will be gathered through the presscorner of the European Commission at https://ec.europa.eu/commission/presscorner. Using this content analysis, conclusions can be drawn on the extent to which the green growth paradigm has an effect on the European Commission's climate policy. Because paradigms are constructed in a social context, and often expressed through use of words, a content analysis seems most apt to analyse the influence of the green growth paradigm. A quantitative content analysis is preferred over a qualitative content analysis because the goal of this thesis is to provide results with certain degrees of generalizability. Furthermore, a quantitative content analysis reduces the chances of bias in the empirical analysis (Halperin & Heath, 2017, p. 346). By using a large number of cases, rather than a smaller number of cases, this generalizability is guaranteed.

Next, this part of the methods section will explain on a step-by-step basis how the research will be conducted. On the website of the European presscorner (European Commission, 2011), there will be a filter on the inaugural date of the current European Commission: the first of December 2019. The end date for filtered cases will be set to the tenth of November. Furthermore, there will be a filter on press releases and statements brought forward by the European Commission. Finally, a filter will be in place for all policy areas directly related to climate policy: climate action and environment. With these filters in place, a total of 100 policy pieces will be left to analyse. From these policy pieces, some infringements have been removed. These infringements involve the Commission referring one or more countries to the Court of Justice for not abiding by certain agreements that have been made. Since these infringements do not directly reflect the EU's climate policies, they have been removed from the list of analysed policy pieces. That leaves 80 policy pieces to be analysed. All these policies will be downloaded in the form of PDFs. For the analysis, anything after the title and before the section 'for more information' will be regarded as data. This means the title and the part after 'for more information' will not be included in any of the analyses conducted in this research paper. These policy pieces will then be analysed to investigate to what extent the pieces are tied to the green growth paradigm. For this purpose, the following category coding will be used:

Table 1. Keyphrases for the green growth paradigm.

Category	Keyphrases
Keyphrases tied to the current green growth paradigm.	Green growth, green development, sustainable development goals, sustainable development, Paris agreement, Paris goals, resource usage/resource use, decouplage/decoupled, economic growth/sustainable growth, efficiency, technological innovation, innovation, technology/technologies.

Through this category coding, an analysis of the aforementioned 80 policy pieces will take place. There will be an overview of how many keyphrases are found in all of the policy pieces. Furthermore, amounts of specific keyphrases will also be presented, to show whether one part of the green growth paradigm disproportionately influences the EU's climate policy. In the end, these numbers will point to the extent to which the EU's climate policy is influenced by the green growth paradigm. An important side-point is: terms or parts of these terms will be ignored if they are used in the context of a name. For example: in the 'Green Deal' and 'Innovation Fund' the words 'green' and 'innovation' will not be taken into account for the keyphrases of the category coding.

Before moving on to the second part of the empirical investigation, it is important to clarify why the terms in the above table have been chosen. They must clearly be related to the green growth paradigm to be an effective indicator of a policy piece's connectedness to the paradigm. Firstly, green growth is of course the name of the climate policy paradigm, therefore inherently tied to itself. Green development is often used as an interchangeable term. The Sustainable Development Goals are the current development goals, which have been shaped under the current green growth paradigm, thus proving its connectedness (Hickel, 2019). The Paris agreement also is an agreement formed with the current green growth paradigm as a basis. Paris goals is used as a synonym in this case. Resource usage and decouplage are also core terms of the green growth paradigm, according to Hickel and Kallis (Hickel, 2019; Hickel & Kallis, 2020). A reduction in our resource usage is required as a core assumption of effective green growth. Decouplage is one of the core concepts of green growth, revolving around the decouplage of resource usage from global GDP (Hickel & Kallis, 2020). This means a way to increase global GDP will be required, while not simultaneously increasing our resource usage. Increasing GDP without increasing resource usage is the only way to grow our economy while preventing climate change from getting out of hand. Therefore economic growth, and global economic growth are both tied to the green growth paradigm through decouplage. Sustainable growth is usually a reference to a climate-effective way of growing the economy. This term references the same economic growth while maintaining responsible climate policy. Moreover, green growth relies on future technological advancements to facilitate growth of the economy with a decrease in resource and energy demand (Lorek & Spangenberg, 2014). This makes technological innovation a relevant term to search for the presence of green growth paradigm influence. Efficiency, innovation and technology are used as interchangeable terms with technological advancement in this regard.

After the amounts of all keyphrases in our 80 policy pieces have been gathered, the second empirical part of this thesis will take place. The second hypothesis still needs to be researched. The second hypothesis stated that actors will often emphasize potential economic growth over direct climate policy when propagating their climate policy to the public. To be able to prove or disprove this hypothesis, the first category of green growth paradigm keyphrases will be divided into two. The below table shows how this is done:

Table 2. Overview of the keyphrases divided into two categories.

Category	Keyphrases
Emphasizing climate policy agreements.	Green growth, green development, green transition, Sustainable Development Goals, Paris accord, Paris agreement, Paris goals.
Emphasizing potential economic or societal progression.	Economic growth, Efficiency improvement, Technological advancement, Technological innovation, Innovation, Technology/technologies.

In this category coding, words from the first category represent a stronger emphasis on the climate policy parts of the green growth paradigm. This entails agreements and obligations the EU has made concerning its climate policies. In the second category, all words surrounding economic and social profits are to be found. A bigger amount of these words will mean a stronger emphasis on the possible positive effects of the actor's climate policy. If the hypothesis connected to these categories is to be confirmed, a significantly larger amount of words in the second category should be found, compared to the amount of words from the first category found in the texts. For the purpose of this investigation, all keywords collected under the first part of this research will be re-used. This means the overview of found keywords within the same 80 policy pieces will be analysed using SPSS. The same data used to answer the first hypothesis will be used to answer the second hypothesis.

Before the results of this investigation are presented, it is important to clarify one more point. It may seem like some of the keywords used in the above coding schemes are not only applicable to the green growth paradigm. For example, a politician endeavouring to increase our military capabilities might also emphasize the importance of technological innovation.

However, it is important to note that the files which will be searched for these keyphrases are already filtered as being connected to climate policy. This means that the keyphrases found in these policy pieces are always connected to climate policy, and are through their meaning and position within climate policy papers also part of the green growth paradigm.

Empirical analysis

Hypothesis 1

For the purpose of testing hypothesis 1 as being positive or negative, a table with the amount of policy pieces which mentioned at least one keyphrase from the green growth paradigm is required. An overview of this can be found in Table 3. As shown in the table, 27,5%, or 22 policy pieces did not mention any keyphrases from the green growth paradigm. The other 72,5%, or 68 policy pieces mentioned at least one keyphrase from the green growth paradigm. Furthermore, the mean amount of keywords per analysed policy piece pertained to 3.39, with a total of 271 keywords total over all 80 policy pieces.

Table 3. Amounts of keywords found in statements and press releases

Keywords	Frequency	Percentage	Cumulative percentage
0	22	27.5	27.5
1	15	18.8	46.3
2	9	11.3	57.5
3	6	7.5	65
4	8	10	75
5	4	5	80
6	3	3.8	83.8
7	1	1.3	85
8	4	5	90
9	1	1.3	91.3
11	1	1.3	92.5
12	2	2.5	95
13	3	3.8	98.8
28	1	1.3	100

Based on this data, a conclusion regarding the first hypothesis can be drawn. This hypothesis stated that there is a strong connection between the EU's climate policy and the green growth paradigm. The quantitative content analysis showed that almost three-quarters (72,5%) of the analysed policy pieces had at least one mention of a keyphrase connected to the green growth paradigm. Moreover, over half the analysed policy pieces (53,7%) even mentioned keyphrases connected to the green growth paradigm more than once. On average, keyphrases connected to the green growth paradigm were mentioned 3 times per policy piece. This already seems like enough evidence to conclude that the green growth paradigm heavily influences the EU's climate policies, but another interesting connection can be made. In all 80 policy pieces, a total of 271 keyphrases from the green growth paradigm has been found. By contrast, the EU's own Green Deal policy, which is its current policy plan regarding climate change, is mentioned 'only' 57 times in the same 80 policy pieces. When considering both these parts of evidence, it must be concluded that the first hypothesis has been tested positive by the quantitative content analysis. The green growth paradigm does in fact heavily influence the EU's climate policies. Relating this to this paper's theoretical framework, this conclusion can be broadened through Wendt's research (1992). Apparently, the green growth paradigm must have great meaning for the European Commission for it to conclude it in its climate policies so frequently.

Hypothesis 2

Now, to find an answer to the second hypothesis, overviews of the two categories from our second coding scheme are required. For this representation, the keyphrases in the two categories will be summed up in new variables. This way, it will become clear how many times the actual commitments to climate policy were mentioned, and how many times societal and economic advantages of the EU's climate policy have been mentioned in the analysed policy pieces.

In table 4, the means and sums of each category for the second hypothesis are represented. The column 'emphasis on climate' represents the first category: these are keyphrases representing an emphasis on climate agreements and commitments. The column 'emphasis on economy' represents the second category. These are keyphrases representing possible societal and/or economic gain in the Commission's climate policies.

Table 4. Sums and means of keywords in category 1 and 2

	Emphasis on climate	Emphasis on economy
Mean	0.79	2.45
Sum	63	196

Now, to test whether or not a significant difference between the two categories is present, a paired samples t-test will be conducted. A paired samples t-test has been chosen because both categories of keyphrases are extracted from the same policy pieces. The results of this test can be found in table 5. This t-test shows that the amount of keyphrases found in the 'emphasis on economy' category is significantly higher than the amount of keyphrases found in the 'emphasis on climate' category with $t = 3{,}643$ and $p < 0{,}001$.

Table 5. Paired samples t-test for the amounts of keywords in category 1 and 2

95% Confidence interval				
Lower	Upper	*t*	df	Sig.
0.754	2.570	3.643	79	0.000

Based on this data, a conclusion regarding the second hypothesis can be reached. This hypothesis regarded the balance between mention of climate policy commitments and economical or societal gains from an actor's climate policies. Hypothesis 2 states that actors will make mention of the economic or societal benefits of its climate policy more often than the climate policy and agreements the actor has committed itself to. Through the tables above, it becomes clear that the benefits of the EU's climate policies have been mentioned over 200% more than the climate agreements and policies the EU has committed to (196 as compared to 63). Furthermore, a paired sample t-test showed that this difference was significant with a significance of over 99.9%. Therefore, it must be concluded that the second hypothesis of this research article has also been tested positive. It turns out economical profits from the EU's climate policies are mentioned excessively when compared to the climate policies. Linking this to research discussed earlier in this paper, this provides the conclusions of many authors with an empirical basis. All the authors who found that green growth attempts the combination of economic profits and climate change prevention to an unreasonable extent (Hickel, 2019; Hickel & Kallis, 2020; Smulders, Toman & Withagen, 2014; Lorek & Spangenberg, 2014), have been proven right.

Finally, to test for a bias between press releases and statements, an independent samples t-test will be conducted. The decision for an independent rather than a dependent sample t-test has been made since the populations of press releases and statements are per definition completely different. This t-test will be performed to make sure there is no bias in the results because of file typing. The results of this test can be found in table 6. In this table, equal variance of the samples is not assumed, since Levene's test for equality of variances came up as significant, with $F = 7{,}91$ and $p = 0{,}006$.

Table 6. Independent samples t-test of press releases compared to statements

Levene's test				
F	Sig.	*t*	df	Sig.
7.91	0.006	1.199	11.800	0.254

Table 6 proves that there is no bias of the results between press releases and statements, with $p = 0.254$. These two categories of files can therefore be treated the same for the purposes of this research paper. Although this t-test does not provide results directly relevant to the hypotheses and research question of this paper, it does improve the validity of the empirical findings. It makes sure that the difference between statements and press releases does not somehow influence the findings of this paper.

Limitations

Some limitations of the conducted experiment need to be pointed out. For starters, through the use of quantitative data analysis important context may have been missed. Perhaps green growth paradigm keyphrases were usually found within certain contexts or sentences. Sadly, with the current research design these contextual factors will most likely be overlooked. However, this quantitative paper provides a more solid base for future research than a qualitative paper, because it is better at showing influences on a large scale. Since this paper attempts to draw conclusions on a massive discourse, namely EU climate policy, a more substantial body of researched literature provides more reliable results. Moreover, some discussion might arise regarding the generalizability of this research's findings. Since this research paper is the first one of its kind, it is not clear the results of this research are generalizable to other actors than the EU. Perhaps there is a key feature making the European Union behave uniquely in its climate policies. Thirdly, there was no control for certain

spokespeople and/or members of the European Commission. Therefore, some results of this investigation might prove tied to a certain Commissioner within the Commission, rather than being tied to the EU's climate policies as a whole.

Summary

Concluding, the results of this quantitative content analysis turn out to be conclusive. Both hypotheses (H1 and H2) posited in this paper have been tested positive. It therefore turns out that the green growth paradigm has a strong influence on the EU's climate policies. Furthermore, the green growth's effect on the EU's climate policies disproportionately hinges on the economic and societal benefits that green growth promises, while underemphasizing climate agreements like the Paris Agreement and the Sustainable Development Goals. This provides evidence that the European Commission might have fallen prey to the fallacy discussed in this topic's literature. It appears as if the EU's climate policy makers might be attempting to combine economic growth with responsible climate policy to an unrealistic extent.

Conclusion

Through a quantitative content analysis, this research paper has shown two important facts. Firstly, international actor's climate policies are heavily influenced by the green growth paradigm. Secondly, through this influence, the green growth paradigm places an overemphasis on possible economic gain from climate policies. Through this analysis, the connection between the current green growth climate paradigm, and the EU's climate policies has been explored. In the literature review at the start of this research paper, it became clear that many authors believe actors are too optimistic in their expectations for the combination of economic growth with responsible climate policies (Hickel, 2019; Hickel & Kallis, 2020; Smulders, Toman & Withagen, 2014; Lorek & Spangenberg, 2014). These results provide several contributions to the literature. First of all, it provides the issue of overemphasizing economic growth with an empirical basis. Until now, this issue has only been researched and discussed in a purely theoretical manner. Now proof of this same issue has been found empirically. Moreover, this paper's findings directly link the green growth paradigm to a major actor's climate policies in a conclusive way. Until now, the green growth paradigm and climate policies have been researched separately many times, but never combined as in this research paper.

The above results lead to multiple practical implications, among which one major implication outshines all others: international actors need to stop clinging to economic growth in combination with our climate policies. During the literature review part of this thesis, it has become very clear that the combination of these two is barely possible, maybe even not at all. Several independent researchers found separately that IO's expectations of the extent to which economic growth and climate policies are combined are way too optimistic (Hickel, 2019; Hickel & Kallis, 2020; Smulders, Toman & Withagen, 2014; Lorek & Spangenberg, 2014). This leads to a very unambiguous conclusion: if we wish to responsibly resolve the current climate crisis and prevent excessive global warming in the future, we have to let go of our dream of economic growth in tandem with those goals. It appears policy makers around the globe simply have to accept that economic concessions will have to be made in order to get us out of the climate crisis without causing irreparable damage to our planet. Complementary, the empirical part of this thesis has made it clear that actors do in fact overemphasize economic gain when expressing their climate policies to the public. In fact, actors mention possible economic growth as much as three times as many times as they mention climate agreements and rules, within the policy pieces exclusively dedicated to their climate policies.

Concerning possible avenues for future research, many directions can still be explored. First off, a qualitative discourse analysis into the same question as this paper posits could prove insightful. This might provide more information on several issues, like: is the influence of the green growth paradigm affecting the effectiveness of climate policies? This might also provide understanding of how exactly the green growth paradigm influences climate policies. Unfortunately, the quantitative nature of this research paper was only able to prove that the green growth paradigm influences climate policies, not how the paradigm does this. Thirdly, now that it is clear that the green growth paradigm influences climate policies, it is interesting to explore what then influences the current climate paradigm? Who or what forms this paradigm, and why? Moreover, different people within the EU or European Commission can be investigated. Perhaps the president of the Commission has a disproportionate influence on the green growth discourse throughout the EU's climate policies. Another option is that certain members of the European Commission simply use more or less green growth paradigm keyphrases due to their own beliefs. This will have to be investigated further. Finally, repetition of this research with different international actors is also important. This is necessary to prove the generalizability of this paper's results.

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