

Mitigating Climate Change Through the Market? A Critical Analysis of the European Union Emissions Trading System and Biomass Policies

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Summary:

This thesis revolves around an analysis of two of the cornerstones in European Union (EU) climate policy - the European Union Emissions Trading System (EU ETS) and biomass as a renewable energy source. The methodology is that of a comparative study, rooted in a most similar systems design, conducting a longitudinal study of using discourse analysis as its main method when analysing the two cases. The theoretical framework is rooted in the meta-theory of Critical Realism and Critical Political Economy (CIPE), developing a neo-gramscian framework using concepts from Economic Sociology. The latter is chosen, as both cases are seen as cases of “market innovation” in the EU’s climate policy. The central argument advanced and concluded in both cases, as well as in the comparative discussion, is that the continued salience of both policies in the EU’s overall climate policy, is due to the stability in discourse regarding the perceived effectiveness of both policies, regardless of the considerable market instability in both cases. In neo-gramscian terms, these discourses have achieved considerable *hegemony*, and both markets can be said to have consolidated to a large degree. However, due to both cases being characterised as having considerable market instability, one cannot conclude with much certainty that the policies will continue to be consolidated. This is especially noticeable in the biomass case, where the policy is receiving significant challenges from epistemic communities within the European institutions and from several member states. It is less noticeable in the EU ETS case, as the markets have stabilised as of late. However, this has happened before in the history of this unstable carbon market and therefore one should be careful in overestimating this short-lived stability.

Keywords: EU Studies, Climate Policy, EU ETS, Biomass, Renewable Energy, Green Transition, Neo-Gramscian, Economic Sociology, Critical Discourse Analysis, Critical Realism, Comparative Policy Analysis

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List of Acronyms:

CDM - Clean Development Mechanism

CEEC - Central Eastern European Countries

CHP - Combined Heat and Power

EEA - European Environment Agency

EUA - EU Emission Allowance

EU ETS - European Union Emissions Trading Scheme

FQD - Fuel Quality Directive

GEA - German Environmental Agency

GGG - Green Growth Group

GHG - Greenhouse Gas Emission

ICAO - International Civil Aviation Organisation

ILUC - Indirect Land Use Change

LCA - Life Cycle Analysis

LRF - Linear Reduction Factor

IMO - International Maritime Organisation

LULUCF - Land Use, Land-Use Change and Forestry

MRV - Monitoring, Reporting and Verifying

MSR - Market Stability Reserve

NAP - National Allocation Plan

RED - Renewable Energy Directive

SFM - Sustainable Forest Management

UNCED - United Nations Conference on Environment and Development

1. Problem Area

Addressing anthropogenic climate change has for too long been neglected, either because of “climate scepticism”, conventional economic wisdom and recently also due to other global crises such as the refugee crisis and the global financial crisis (Burns & Tobin, 2016; Scavenius & Lindberg, 2018). We have witnessed one of the world’s leading climate sinners withdraw from global agreements, first under the George W. Bush presidency and recently when the Trump administration withdrew from the Paris agreement (Milman et al., 2017). Despite warnings from the Intergovernmental Panel on Climate Change (IPCC), global emissions are not currently stabilizing at a level which is sufficient and at the current pace global are projected to go beyond 2°C (IPCC, 2018). In part because of the combination of worrying future prospects and relative political stagnation, academics from various fields has felt the need to increase public awareness and demand political change (Andersen, 2018). Especially young people have shown their dissatisfaction with the current development on an unprecedented scale, which resulted in 1.4 million young people striking from their usual school activities to demand increased political attention on anthropogenic climate change (Carrington, 2019). These claims have been supported by thousands of scientists from all around the world through an open letter (Bowden 2019; Kalmus et al., 2019).

The European Union (EU) as one of the most legally expansive supranational institutions, can legally commit its member states to binding emission targets which can be sustained long-term. Furthermore the EU has been considered as an important global actor, and some will argue that the EU is a global leader when it comes to addressing and targeting climate change (Damro, 2006 & Kelemen, 2010 in Delreux, 2014). However, considering the perceived failure of the EU negotiation strategy at the salient Conference of the Parties (COP) meeting in Copenhagen in 2009 (COP), questions regarding the effectiveness of the EU as an international leader in climate mitigation has emerged in the literature (Groen & Niemann 2013 & Oberthür, 2011 in Delreux, 2014). While this may be somewhat remedied by the relative success of the global emissions agreement arrived at in Paris 2015, the EU and its member states are experiencing difficulties in reaching the agreed goals short-term (Hansen, 2018; Christensen, 2016). In order to give some context as to why that is, a short historical overview follows:

Because of its economic roots, centered around trade and nuclear energy cooperation, the EU was a negligible actor in environmental politics for the first few decades of its existence

(Carlarne, 2010). While the wave of new political movements and its subsequent political mainstreaming facilitated the inclusion of environmental laws at an EU level, it was not until the implementation of the Single European Act (SEA) and the ensuing consolidation of the single market that the EU received noticeable environmental “teeth” (Carlarne, 2010). The following decade introduced the principles of “polluter pays” and “precautionary” principles as core principles in EU environmental legislation (Carlarne, 2010).

The 1990’s saw the introduction of the first multilateral meetings and agreements on climate change, most noticeably resulting in the annual meeting of the *Conference of the Parties* (COP) and the first multilateral agreement on specific greenhouse gas (GHG) reduction targets under the Kyoto Protocol (1998). The EU attempted to establish itself as an international leader both in rhetoric, by framing anthropocentric climate change as a security threat, and by committing itself to the principle of “common but differentiated responsibility”, attempting to make the multilateral agreements more acceptable to large developing countries (Dupont, 2018; Delreux, 2014). This international leadership was followed up by internal policies to facilitate the implementation of the Kyoto Protocol. However, policy tools in this period was largely voluntary or based on incentive programmes such as the European Union’s Emissions Trading Scheme (EU ETS) (Müller & Slominsky, 2013; Carlarne, 2010). Meeting the Kyoto Protocol targets was a rather varied success within the EU member states and largely based on member state policies which had a lot more emphasis on *command and control* style regulations, such as bans, subsidies and taxes (Carlarne, 2010). The universalistic, rationalistic and individualistic approach to climate change adaptation and mitigation, as opposed to contextual and institutional approaches focused on ensuring a socially just transition, has also been heavily criticised for its “a priori” ideas about environmental behavior (Scavenius & Lindberg, 2018). Specifically the assumption that individuals given the right “green attitudes” and information will make environmentally informed choices, which will aggregated will transition societies into low-carbon economies (ibid.).

However, the EU did not turn to more proven policy tools based on *command and control* regulation, which e.g. enabled the expansion of wind energy in Denmark and solar energy in Germany (Carlarne, 2010). It has also been argued that other crises, such as the global economic crisis, the Eurozone crisis and the refugee crisis, has diverted attention away from responding to anthropogenic climate change (Dupont, 2019; Burns & Tobin, 2016). Especially the aftermath of the global financial crisis presented a window of opportunity for

so-called *green stimulus* packages, where macroeconomic imbalances and the financial need of the green transition could have been combined, but was instead replaced by austerity measures (Burns & Tobin, 2016). On top of all this, the EU has also been in the process of integrating its newest member states, resulting in the most heterogeneous mix of member states yet, thus making consensus building in the legislative institutions even more difficult (Carlarne, 2010). While integrating climate issues into general EU budgeting and policies has become increasingly mainstream, a continued reliance on highly controversial policies such as biomass and the EU-ETS, the later having being dubbed the *new grand experiment* has continued (Kruger & Pizer, 2004 in Wettestad & Jevnaker, 2016; Rietig, 2019). Instead the EU has had several attempts at fixing the EU-ETS and has had a contested experiment with qualifying biomass as a renewable source of energy (Skjærseth & Wettestad, 2010(b));(EURACTIV, 2012(b)). These two programmes in particular has raised many serious doubts over their perceived utility.

As a response to the EU's Renewable Energy Directive (*Red II*) adopted in 2018, plaintiffs from respectively France, Estonia, Romania, Ireland, Sweden, Slovakia and the US have on the 4th of march filled a lawsuit against the European Union in order to challenge the inclusion of forest biomass in the EU's renewable energy directive (Simon, 2019). It is argued that: "*The treatment of biomass as carbon neutral runs counter to scientific findings*" (Simon, 2019:1). Hereby stating that the combustion of imported wooden biomass for energy purposes, typically emits 1.5 times more CO₂ compared to coal and three times more compared to that of natural gas (Simon, 2019). The group of plaintiffs claims that the EU institutions have failed taking account of scientific evidence provided by almost 800 scientists, who last year wrote to the European Union (Ibid.). The scientists warned them that "*(...) even if forests are allowed to regrow, using wood deliberately harvested for burning will increase carbon in the atmosphere and warming for decades to centuries. The reasons are fundamental and occur regardless of whether forest management is "sustainable"*" (Beddington, 2018:1). The scientific evidence estimates that biomass harvesting and combustion for energy purposes exacerbates climate change by causing deforestation outside of Europe and is incompatible with meeting international climate commitments (Simon, 2019; Beddington, 2018). Despite these warnings the updated version of the EU's renewable energy directive, continued to include biomass as a renewable source of energy and currently accounts for 60% of the renewable stock (Keating & Simon, 2018). Thus it constitutes a very central element in the EU's ambition to reach its renewable targets of 32% for 2030 and in the longer term (Ibid.). Because of this regrettable development, it is of

central importance to understand the political causes for why biomass came to play such a central role in the EU's renewable energy policy. Especially when other policy tools, such as investment in other renewables and carbon taxes, could have been used instead.

The EU-ETS has been characterized in the literature as a major “policy success” (Oberthür, 2011 in Fitch-Roy et al., 2019:6) and described by the European Commission itself as a “cornerstone” of EU climate policy (European Commission, 2015(a):4).

However, simultaneously the major success of the ETS has been described as the mere fact that a market for carbon quotas now exist, but that the prices of quotas have been too low to have any discernible effect on GHG emissions due to excessive national allocations of quotas (Fitch-Roy et al., 2019; Böhm et al., 2012). The only way such observations can harmonise with the classification of a policy success is if one is only concerned with policy formulation and not with policy outcomes. However, the policy has been characterised by large fluctuations in the price of emissions allowances, most notably hovering over zero for a large part of its short history, causing widespread concern over the policy's effectiveness (Wettestad & Jevnaker, 2016). These problematic findings, are yet another reason to investigate how such an ineffective policy programme, became a cornerstone in EU policy. In order to investigate how two such problematic climate mitigation policies became central in EU climate policy, we have formulated the following research question:

Why did the EU-ETS and biomass policies emerge as key components of the EU's overall climate change mitigation strategy?

With the following subquestions:

How has the climate policy of the EU been studied within EU studies and why have we chosen the specific theoretical framework?

What factors can be identified as having significantly contributed to the consolidation of the EU ETS as a cornerstone in EU climate policy?

What factors can be identified as having significantly contributed to the consolidation of Biomass as the most utilised renewable energy source in EU climate policy?

In order to answer the research question and the related subquestions, the following structure of the thesis has been adopted:

Chapter 2 Contains the theoretical bulk of the thesis, including a review of existing theories on the topic and their relevant findings. In the end we will argue for adopting a framework based on Critical Political Economy and Economic Sociology.

Chapter 3 Concerns this thesis' Methodology section introducing the applied Philosophy of Social Science, the research strategy, the data collection, the methods used and lastly accounts for our operationalized theoretical framework.

Chapter 4 Conducts the first of the two analysis sections and will investigate and study the creation and continuous promotion of the EU ETS, identifying discourses and aspects related to market stability over the policy's "lifespan".

Chapter 5 Provides the second half of the two analysis sections and will investigate how Biomass was promoted as a renewable energy source at the EU-level, also focusing on discourses and market stability aspects related to the continuous "requalification" of biomass as a renewable.

Chapter 6 Lastly, similarities identified from the two individual analysis sections will be compared and discussed within the neo-gramscian framework with following concluding remarks, attempting to provide an answer and explanation to the research question of the thesis.

2. Literature Review and Theory

This section contains the thesis' literature review and concludes regarding the chosen theoretical framework of the thesis. It will start by briefly explaining some of the core reasons why EU studies have an epistemic divide between so-called "mainstream" and "critical" research paradigms. It then reviews the mainstream theoretical work on EU climate policy, which is dominated by meso-level theories focused on conceptions conceptualising aspect of leadership, learning and coalition-building within EU climate politics. While the mainstream literature has an increased focus on conceptualisation and is empirically rich, we will form a critique of this strand of scholarship rooted in critical scholarship and philosophy of social science. Hereafter we will review the critical literature on EU climate politics, before developing our theoretical framework rooted in Critical International Political Economy (CIPE).

2.1 Mainstream EU Scholarship and Climate Politics

The so-called mainstream scholarship is characterised by significant pluralism and heterogeneity, ranging from grand theories of international relations (IR) rooted in realism, functionalism and liberalism, while also including more "discursive" approaches such as the discursive institutionalism popularised by Vivian Schmidt (2008) (Manners & Whitman, 2016). Mainstream EU scholarship does contain a certain level of diversity, there are several philosophical, historical and what one might characterize as discursive reasons for the general exclusion of several perspectives from the mainstream scholarship as EU studies has consolidated itself as a distinct discipline (Rosamond, 2016; Manners, 2007).

Based on the significance attached to the disciplines "great debates", EU studies has continuously (re)produced itself as a "normal" science rooted in a rationalist-positivist meta-theory typical of american political science, even if it has included constructivist approaches originally rooted in other philosophies of social science (Rosamond, 2016; Manners & Whitman, 2016) Broadly speaking, these paradigms includes *integration theory* (intergovernmentalism and supranationalism), *institutionalism* (rational choice, historical and sociological), *governance perspectives* (e.g. Multi-level and polycentric governance) and *comparative politics* (e.g. Europeanization) (Manners, 2007). Thus perspectives rooted in marxism, feminism, "green theory", post-structuralism and perspectives within the

borderlines of these paradigms have traditionally been excluded from the mainstream of EU Studies (Rosamond, 2016). Arguably, in times of systemic crisis, the current climate crisis being one example of such a crisis, an epistemic divide excluding critical perspectives which fundamentally questions conventional social practices is harmful for the overall advancement of theory that can contribute to overcoming such systemic crises (Manners & Whitman, 2016). Therefore, we find it relevant to account for this overall divide as we situate ourselves in scholarship and subsequently develop a critical framework for studying the climate policies of the EU which we will further elaborate in the concluding section of this chapter.

Most of the relevant mainstream literature identified in this chapter, can be characterised as being of a meso-level orientation, often rooted in the *governance* paradigm referred to in the preceding paragraph. Besides this main body of work, some mainstream scholarship is also rooted in the IR theory of *securitization* (e.g. Dupont, 2018) and some studies have a largely descriptive character (e.g. Benson & Russell, 2014). Concepts of central importance in these studies are leadership (E.g. Kern & Bulkeley, 2009; Tourney, 2019), learning (e.g. Rietig & Perkins, 2018; Jänicke & Wurzel, 2018), and actor cohesion and coalition building (e.g. Delreux, 2014; Müller & Slominski, 2013). They often depart from defining the EU as a multi-level and polycentric governance structure (e.g. Jänicke & Wurzel, 2018; Kern & Bulkeley, 2009), without a strong center from where leadership emerges. From that definition, a perceived paradox of the EU being a global climate leader, both in climate *policies* and in climate *politics*, while being conceptualised as a so-called “leaderless” polity is inferred (Jänicke & Wurzel, 2018; Wurzel et al., 2018; Liefferink & Wurzel, 2017). As opposed to a more “top-down” style of leadership with a strong center leadership in the EU, and in climate politics in particular, is defined as having many “centers”, hence the term polycentric. Scholars research and conceptualise these different “centers” in the perceived polycentric governance structure and attempt to conceptualise the different actors in as different archetypes of leaders and followers. Actors conceptualised to be leaders includes lower levels of government including municipalities (e.g. Kern, 2018; Kern & Bulkeley, 2009), industries (e.g. Eikeland & Skjærseth, 2019, Bach, 2018) and of course actors traditionally afforded agency such as nation states and the legislative, executive and judicial branches of the EU (e.g. Wurzel et al., 2018).

The perceived paradox of leadership is quite obvious when considering the EU as a leader in global climate negotiations, which is the focus of much mainstream scholarship on EU climate politics (Oberthür & Groen, 2018; Birchfield, 2015; Delreux, 2014; Staniland, 2012;

Parker & Karlsson, 2010). Here there is a discernible difference between how the EU is represented externally compared to most other polities, once an internal compromise has been struck (Delreux, 2014). Furthermore, this type of scholarship seeks to conceptualise how the EU can be a foreign actor and therefore by necessity has to simplify the analysis to a large degree and conceptualise the EU as a *single* actor (ibid.). This perhaps entails surrendering some thick description at the sword of generalisation, but nevertheless seems like an obvious reason to do so.

However our problem area and our two cases, Biomass as a renewable and the EU ETS, are cases of *internal* EU policy and largely falls into the domain of institutionalised EU politics, as opposed to grand interstate bargains such as the Paris agreement (Oberthür & Groen, 2018). While these policy programmes obviously have an external dimension, perhaps best reflected in the global ambitions of the ETS scheme, the political battles are being fought internally and have become part of the regular routine of inter-institutional bargains (Müller & Slominski, 2013; Parker & Karlsson, 2010). Here, the “leaderless paradox” seems less obvious and the extensive conceptualisation less justified. While the (re)production of EU politics is arguably a more complicated affair than that in any of its member states, strong centers of decision in EU climate politics are fairly well known. On the intergovernmental side a coalition of northern member states have dominated the ideational direction of climate politics and the European Parliament has a well documented centralist tendency excluding the political “extremes” from most legislative work just as pointed out by Wettestad and Jevnaker (2016) in their analysis of the EU ETS. Also, the legislative process of the EU itself favors the agency of the European Commission which as “guardian of the treaties” has a tendency to favor more integration usually based on the premises of completing the single market, a tendency also prominent in our analysis as we will show later (Carlarne, 2010). In effect, the regular inter-institutional legislative process of the EU functions as a power center despite its unusually complex characteristics. Perhaps, there is a tendency to overestimate the *sui generis* character of the EU, ignoring that other large democracies such as India or Indonesia are very heterogeneous as well, while still maintaining established power centers (Mattheis, 2017).

While the paradox of the EU being a “leaderless” climate leader might be more dubious when considering the internal climate politics of the EU, this does not negate a focus on governance structures and the identification of alternative centers of leadership.

The critique put forth here, is that it overestimates these alternative centers by ignoring the

general stability in EU climate policy and the stable coalitions that have produced these outcomes. The bulk of the mainstream scholarship covered here seeks to explain the *outcome* of EU climate politics by reference to its polycentric and multi-level governance structure, a very technocratic explanation, or by reference to the *outcome* of coalitions and attempted leadership (e.g. Müller & Slominski, 2013; Liefferink & Wurzel, 2017). One example of this relates to our own case selection, as illustrated by Müller & Slominski (2013) in their analysis of the 2009 reformulation of the original EU ETS directive.

Here the outcome is explained by identifying the “exit-strategies” actors use to break negotiation deadlocks and the possible long-term consequences that these strategies have (ibid.). While attempting to understand which opportunities for agency EU decision-making affords different actors is obviously important, it downplays “traditional” power centers of decision-making and the general stability they produce. Secondly, explaining outcomes by referring to the outcome of coalition-making and attempted leadership, rather than to factors such as discourse, power-relations or political and economic structures that are the structures underpinning such behavior, is arguably affording causality to the effects of causes rather than to the causes themselves. While framing it differently, mainly within the confines of intergovernmental theory, the explanation advanced by Wettestad & Jevnaker (2016) relies on similar explanations although by reference to state interests and domestic, without “unpacking” these, effectively conducting a somewhat reductionist realist analysis. Regarding our other case, the promotion of biomass as a renewable energy source, only social science literature on *biofuels* (a small portion of the promotion of biomass) was identified (Skogstad, 2017; Di Lucia & Kronsell, 2010). This general lack of literature have made getting an overview of the field more difficult, but nonetheless makes for an obvious reason to study the EU’s most utilised renewable. Similar concerns were expressed by our expert informant on biomass, making it likely that the political processes behind this controversial and integral renewable are heavily understudied (Appendix, A2).

This lack of theoretical explanatory power was also identified by mainstream scholars themselves (Liefferink & Wurzel, 2017). This critique is related to the fact that too often the analysis produces heavily descriptive outcomes such as typologies of the different types of leaders and followers, and the different types of coalitions (e.g. Tourney, 2019). At best it produces conclusions about the types of agency available to actors in specific coalition circumstances, which is arguably a valuable analytical tool linking structure and agency (Müller & Slominski, 2013). The critique here is not that describing coalitions, attempted leadership and negotiation strategies does not produce any explanatory power at all, the critique here is that it affords primary causality to the wrong points in the causal chain

ignoring power-relations, politico-economic factors and ideational factors in the process. As Apeldoorn (2002) argues, mainstream approaches to EU studies most often do not seek to identify the social purpose of a given EU policy, thereby naturalising the general direction of the EU and instead often resorts to identifying regularities in the practice of EU policy-making rather than explaining the qualitative direction of such policy-making. By ignoring these factors the different analyses places themselves squarely into the problem-solving camp, not attempting to identify contingencies and by extension does not attempt to identify any alternative policy suggestions (Cox, 1981 in Manners, 2007). Here we agree with the general consensus in critical scholarship that theory is always for someone and for some specific purpose, and therefore we are critical of mainstream scholarship that does not seek to describe or explain the general direction of EU climate policy and the general direction it (Cox, 1981 in Manners, 2007). Not doing so breaks with the critical scholarship's ambition, and ethical standpoint, of doing scholarship that seeks to aid in the path towards increased human emancipation (Manners, 2007). Noticeable exceptions to these general tendencies in mainstream scholarship is the *discursive institutionalist* approach advanced by Fitch-Roy et al. (2019) in analysing corporate interests in the EU ETS, although the article is, ironically, not based on a discourse analysis per se and are more concerned with the institutional dynamics related to corporate lobbying. Another exception are the scholars writing in the securitization tradition (e.g. Dupont, 2018), although they are mainly concerned with high-level UNFCCC meetings and the ways climate change is increasingly *securitised*, i.e. framed as a security threat at these meetings. On the basis of the criticisms of the mainstream literature and with the research question in mind, we seek to place ourselves in critical strand of EU scholarship.

2.2 Critical EU Scholarship and the Green Transition

Based on the extensive review article of Manners (2007), the following approaches can be characterised as being of the critical persuasion: *Historical Materialism (including neo-gramscian and open marxism approaches)*, *critical theory*, *feminist perspectives*, *Post-structuralism*, *Post-colonialism*, *regulation theory and state theory*.

While at first glance it might seem unjustified or even derogatory to place such seemingly heterogenous perspectives under the same umbrella term, they all share a concern and interest for the distribution and exercise of power and all agree that theorising at least contain some normative dimensions and that the research should not be absent minded regarding normative reflections. In other words, they all share a concern for promoting *“emancipation - the freeing of humans and knowledge from the negative consequences of*

modernity" (Manners, 2007:78). Another glaring reason why these perspectives are lumped together is of course, as the first section describes, that certain theoretical perspectives became "mainstreamed" at the expense of others in the evolution of EU studies as a discipline (Rosamond, 2016). This also entails a philosophical split between the mainstream and critical divide, based on the compartmentalising, regularity-focused and "problem-solving" approach of the mainstream and the more open-system, contingency-focused and normative critical approaches (Ryner, 2012). This entails a move away from identifying regularities in arbitrarily isolated corners of social reality, institutionalism(s) being a prime example of this, and instead relate one's findings to larger processes and structures, identifying discourses and power-relations which reproduces policy paradigms. Also by extension identifying which dissident perspectives are left out and attempting to provide an answer to why this is.

Furthermore, while we do not agree with rationalist-deductionist approach of the various strands of positivism, we contend that it is not sufficient to merely describe present discourses surrounding EU climate policy and hence equate discourse with the full extent of ontological reality. We therefore take the "middle" position of critical realism, adopting a somewhat realist ontology but seeing all perception of that ontological reality as conceptually mediated and hence epistemologically constructivist. A position that will be further elaborated in the methodology section. First, we will cover perspectives from Critical International Political Economy (CIPE), which will be the body of scholarship that we will position ourselves in.

Why CIPE? There are many perspectives one could choose from the so-called critical perspectives, ranging from the most reductionist to the most relativist, e.g. deconstruction "à la Derrida" to orthodox marxism. Besides the meta-theoretical and normative points made in the prior sections, we perceive both our cases as intentionally created markets and therefore analyse them rooted in a *substantivist* take on the economy, instead of treating these two newly created markets as natural occurrences (Doganova & Karnøe, 2015). Lastly, the way we have phrased our research question and problem area makes it obvious that we conceive of the creation and development of these markets as political decisions. This is opposed to framing it as mainly a technical issue, such as if we were focusing on the character of emission prices or sunk investment in biomass, or focusing on the causes of the production of legislation rather than the content, as seems to be the tendency in the mainstream theory covered above. Here the focus is on the active role of governments and the associated political processes in creating and intervening in markets. Therefore, we

generally accept the view that economics and politics are closely intertwined, as the classical pioneering authors of the discipline of political economy held (Jäger et al., 2016). Combined with the obvious international nature of the EU policies we have chosen to study, we perceive their to be sufficient grounds for placing ourselves firmly within the CIPE camp. Furthermore because of the adoption of critical realism as our metatheoretical stance, we conversely cannot adopt a generally constructivist or post-structuralism theoretical position as this does not harmonise with a realist ontology. One could argue for adopting a theoretical framework based on feminist social theory, such as Allwood (2014) does in her analysis of the absence of gender mainstreaming in EU climate policies. However, we find such a perspective does not fit well with our research question, which seeks to explain why the two policies in question become such integral parts of the EU's climate policy. Had our focus been on gendered aspects of these programmes, such as the impact these policies on employment in our very gendered labor market, a feminist perspective would have been a more obvious choice of theory.

We therefore position ourselves within what can be dubbed the general perspective of “transnational historical materialism” - a body of scholarship based mainly on neo-gramscian conceptions of social reality with the aim of understanding and explaining major policy paradigms and paradigm shifts through analyses of how political *hegemony* is consolidated (Buch-Hansen, 2018). A particular political project can be said to be hegemonic once the discourse which underpins it becomes the “common sense” of a given time and space in social reality (Gramsci 1971 in Buch-Hansen, 2018). The perspective seeks to understand and explain the discourses and ideologies of different social groups in relation to their position in the, mostly capitalist, relations of production (Gill, 2016). This is a main difference between a neo-gramscian approach and other approaches which assigns primacy to ideational factors, such as constructivism (Talani, 2016). This again corresponds well with the critical realisms simultaneous acceptance of a realist ontology, and hence material factors, and an intersubjective and historical understanding of epistemology and human knowledge (Jäger et al., 2016). As the name of the perspective indicates, the theoretical framework is rooted in marxist social theory, albeit devoid of any of the determinism and teleology found in orthodox Marxism, instead conceptualising outcomes in social reality as contingent and conjunctural, explained by concurrences of events related to structure and agency that are non-deterministic instead attempting to identify tendencies.

The theory posits that a complex web of social structures and social forces which has to

articulate a coherent political project, something which is not given, in order for a paradigm change to occur (Buch-Hansen, 2018; Gill, 2003).

What brings order and direction to the complex political economy is the previously mentioned concept of *hegemony*, the state of which a particular political project with a related set of discourses, becomes hegemonic and subsumes other paradigms beneath it through a coalition of social forces (Talani, 2016, Gill, 2003). In other words, the particular political project becomes the “common sense” of a certain historical period and its associated discourses become internalised and, hence, become the “common sense” of a given era underpinning policy-making. Contemporary CIPE scholarship within the domain of EU studies, tend to identify Keynesianism as the hegemonic politico-economic paradigm in post-war Europe and Neoliberalism, as the current hegemonic paradigm which gives structure and direction to the political economy (Buch-Hansen, 2018; Gill, 2003). This is not to say that these paradigms become all encompassing and completely dominant, instead they become the primary and to a certain extent unquestionable set of principles on which policy is formulated (Apeldoorn, 2009). One such example is the consolidation of the single market in the EU, where the exposure to competition gained from so-called market freedoms and market discipline has been argued to be the dominant idea in EU policy-making, subsuming other ideas beneath it (ibid.).

What does this mean for the analysis of the climate policy of the EU?

Addressing global warming and the climate policies installed to address it, all revolve around regulating or providing incentives related to human economic activity.

Therefore the policies are economic as well as political in nature, as they relate to the human production and consumption of goods and services. The totality of the issue is such that, if successfully addressed, it will inevitably mean a transition of all sectors of the political economy to low-carbon forms of production, hence the talk of a green *transition* (Scavenius & Lindberg, 2018). Politically this means an economy that is organised on the inviolable principle of staying within the earth’s carrying capacity first and all other political priorities second. The salience of the neo-gramscian perspective in analysing this process, is in its attempt to understand and explain paradigms, as the current political economy and the population which it should serve undoubtedly needs a new paradigm in order to transition. The scholarship talks about *three phases* that political projects can go through and four prerequisites for paradigm change, which includes *deconstructive*, *constructive* and *consolidating* phases. One conclusion is that *neoliberalism* with its market-based approach to policy-making, is in its *consolidating* phase and alternative projects in their *deconstructive*

phase, aiming criticism at neoliberalism's hegemonic position (Overbeek, 1990 in Buch-Hansen, 2018). According to Buch-Hansen the prerequisites for a paradigm change include:

“A deep crisis that cannot be solved by the institutional arrangements to which the currently prevailing political project has given shape (prerequisite 1); one or more alternative political projects that show the ways out of the crisis (prerequisite 2); organic intellectuals and a comprehensive alliance of social forces promoting the project in political struggles (prerequisite 3); and broad-based consent, or at least passive consent, for the political project (prerequisite 4)” (Buch-Hansen, 2018:159).

The term “organic intellectuals” here relates to actors whose intellectual labor aids in the advancement of a particular political project such as scientists, journalists, policy advisors etc. (Gramsci 1971 in Buch-Hansen, 2018).

Furthermore, there are some larger debates latent in the prerequisites listed here, such as whether or not the earth can sustain economic growth and/or capitalism, which will and cannot be addressed properly in this thesis. However, based on work by ecological economists in the recent, ironically EU-funded, report titled, *“Decoupling Debunked - Evidence and arguments against green growth as a sole strategy for sustainability”*, who conclude that absolute decoupling has never taken place on a global scale, and that absolute decoupling a national scale is almost always associated with a rise in emissions elsewhere; we work with the assumption that a transition into a post-growth economy is a necessity (Parrique et al., 2019).

Regrettably, despite the relevance of a neo-gramscian approach in identifying aspects of the political transition, or lack thereof, into policy-paradigms that take the integrity of the biosphere as its overarching organising principle, the theory has been underutilised, at least on the basis of the review process carried out here. Besides the neo-gramscian analysis carried out by Buch-Hansen (2018) here, attempting to identify the prerequisites for transitioning into a post-growth economy, few other similar analyses exist especially within EU studies.

One good example of a neo-gramscian analysis of hegemony and counter-hegemonic strategies, is Ciple's (2017) analysis of the degree to which counter-hegemonic discourses regarding climate justice have been incorporated into UNFCCC political papers. Here it is concluded that where counter-hegemonic alternatives are present, they are subsumed

beneath neoliberal hegemony when articulated as policy (Ciplet, 2017).

The focus is on actor-coalitions which embody the different discourses present in the political process, how the different actors have agency under unequal power-relations and gives a convincing account why the qualitative aspects of the UNFCCC policy papers are the way they are. The *outcome* here is explained by reference to discursive elements and unequal power-relations in the political process. One of the central points here is to explain the process of how a specific discourse, and hence a specific set of policies, continues to dominate within the UNFCCC. Thus the analysis identifies the “social purpose” of the UNFCCC, instead of resorting to the study of regularities at COP meetings. While the analysis is convincing in relation to the arguments advanced in this chapter, it is carried out within a different field than the one examined here. Regarding other CIPE studies of the climate policies of the EU, they seem almost absent based on the literature review carried out here. One possible example is the marxist analysis by Böhm et al. (2012) of global carbon markets, and hence indirectly of the EU ETS, it being the most notable example of a developed carbon market. Here global carbon markets are seen as a continuation of the same capitalist tendencies as before the financial crisis and carbon markets are seen to manifest themselves through “(...)a logic driven by the need for constant expansion of opportunities for capital accumulation” (Böhm et al., 2012:1632). They juxtapose this conclusion to authors who see the post-financial crisis phase of capitalism as a new and greener version of it (Böhm et al., 2012). Finally they relate their findings to the history of capitalist development arguing that recent developments are not qualitatively new. While such a historic analysis of current developments, here illustrated by the advancement of global carbon markets, is valuable in order to assess the historic significance of such developments our research question is related to the political process. The approach advanced by Warleigh-Lack (2014) in the largely theoretical article “Greening Integration Theory”, is one critical approach which is concerned with the political process.

However, as the title indicates, the approach is concerned with the subject matter of the intergovernmental process underpinning European integration. As this thesis concerns itself with cases that are more defined by inter-institutional processes related to the ordinary legislative procedure, we therefore settle on the neo-gramscian and its associated focus on studying hegemonic discourses.

However, in order to operationalise the rather “grand” theory of neo-gramscian political economy, another approach rooted in economic sociology advanced by Fligstein (2001) has been found relevant. The approach takes the same substantivist approach to economics as

mentioned earlier, and conceptualises market creation as a site for political struggle and as something purposely created by public authorities influenced by civil actors. Here we agree with Doganova & Karn e (2015:22) that much EU climate policy, including our chosen cases, illustrates examples of “(...)market innovation” and “(..)that markets are not natural and impartial arenas for competition but constructed market architectures with particular rules for property rights, governance and exchange as well as metrics for the value and qualities of products”. It follows that the ability of public authorities to create and enforce such aspects is fundamental regarding whether or not such markets can develop into stable markets.

The strength of such a combination, is that it allows us to study the market creation inherent in these two cases, while simultaneously accounting for the dominant discourses and actor-coalitions which legitimises such market creation.

Thus this thesis settles on an approach rooted in CIPE based on a neo-gramscian framework with concepts borrowed from economic sociology. This approach will be further operationalised in the following chapter.

Sub-Conclusion:

In the preceding chapter we posed the sub-question: *How has the climate policy of the EU been studied within EU studies and why have we chosen this specific theoretical standpoint?*

In this chapter we have found that a general split exists in EU studies between so-called “mainstream” and “critical” approaches, rooted in meta-theoretical and historical factors.

Within the “mainstream”, the climate policy of the EU is dominated by the *governance* literature which mainly focuses on questions of leadership within perceived polycentric governance structures and member state coalitions. We have found that the critical literature is somewhat underdeveloped, however we find convincing meta-theoretical, causal, empirical and normative reasons for situating ourselves within this strand of literature.

For reasons pertaining to the problem formulation of this thesis, we found that the neo-gramscian perspective is the most relevant for conducting the analysis within the critical scholarship. Furthermore, because of the rather “grand” level of abstraction of this perspective and in order to study the market creation in our two cases, we have found it relevant to complement it with key ideas from economic sociology. The chosen framework will be further elaborated in the methodology section.

3. Methodology

This section contains the methodology of the thesis. The methodology is based on a critical realist philosophy of social science, occupying the middle position between positivist and constructivist positions. Our research design is a comparative policy analysis, with an abductive research strategy and the data collection process has been described.

Our methods include discourse analysis and interviews, with the former taking an approach rooted in critical discourse analysis and the interviews being rooted in a semi-structured approach. Lastly, we operationalise the theoretical framework of the thesis, as mentioned in the preceding chapter.

3.1 Philosophy of Social Science

The meta-theoretical underpinning of this thesis will be rooted in *critical realism*. The fundamental reason for this is that our critique of the mainstream literature covered within our topic, coincides to a high degree with the ontological and epistemological positions of *critical realism*, as highlighted in the literature review.

Therefore it is not surprising that it is a common meta-theoretical position taken by CIPE scholars, perhaps due to their insistence on the causal, non-deterministic, influence of the relations of production (Jäger et al., 2016; Talani, 2016). Roughly speaking, critical realism can be said to occupy the “middle position” between the various strands of constructivism and positivism. It finds the positivist position on epistemology to be incompatible with the nature of social knowledge, it being substantially different from knowledge within the natural sciences, and the constructivist position ontology to be neglecting of real material conditions (Jäger et al., 2016, Wigger & Horn, 2016).

Instead, critical realism operates with a realist ontology and a critical constructivist epistemology, acknowledging reality as existing independently of human experience, but denying that human cognition has direct access to this reality (Sayer, 2000).

The fundamental metaphysical question raised by critical realism centers on how knowledge is possible by asking the question: *How must reality be in order for science to exist?*

(Andersen, 2007:13). In other words, it departs from a question of ontology. Questions that positivists tend to ignore, but questions which are however necessary to answer in order to formulate a consistent meta-theoretical position (Wigger & Horn, 2016). The answer given by critical realism is that we must operate with a stratified ontology, where a distinction is made between what is *real* and what is *empirically* available to the social analyst (Sayer, 2000).

Thus reality exists independent of human observation, but we do not have direct access to this reality, as it is always *conceptually* mediated (ibid.). The conclusion is therefore “*that facts are theory-dependent, but they are not theorized*”. (Andersen, 2007:12).

Furthermore, a critical approach to the study of social reality entails that social knowledge is historically and socially dependent, and that the positivist search for regularities and social “laws” is misguided as social knowledge rarely transcends the period it was created in (Wigger & Horn, 2016). The ontological position reflects this, as social systems are seen as mostly open and always contingent and contextual, the same mechanism can produce different results in different settings (Sayer, 2000). An example from the neo-gramscian scholarship, could be that of capital and labor organising itself differently in different eras. The mechanism is the same, political organisation based on a social groups position in the relations of production, but the outcome is different because of the different contexts the mechanism operates in (Apeldoorn, 2009). What this means for our methodology is that we are interested in explaining the specific *conjuncture* which lead to the entrenchment of the biomass and the European Union Emissions Trading System (EU ETS) policies. Not to identify regularities within the institutional settings of policy-makings, as the mainstream scholarship’s preoccupation with leadership is an example of. That is of course a possible mechanism within policy-making, but it does not explain the outcome. Instead, our critical realist position invites us to identify causal trends in EU climate policy-making, treating causality as probabilistic.

3.2 Research Design

The methodology is rooted in a comparative policy analysis, investigating the policies of the European Union Emission Trading System and the qualification of biomass as a renewable. The research design takes the form of a longitudinally comparative case study, following the two policies over their identified “lifespans”. For reasons of limitation, however, the historical background preceding EU-policies are only covered briefly. In the case of biomass, such an account would be very long indeed, as it is one of the oldest forms of energy production in human history. In the EU ETS case, the use of a similar system in the US preceding the EU ETS is only mentioned briefly as a serious treatment of the topic would seem to require a whole study. Data-wise the analysis is mainly based on political documents associated with EU ETS and biomass policies over these policies “lifespan”, attempting to exhaust the legislative and policy documents related to these policies.

The comparable basis for choosing these two policies, is that they have both been identified as being cornerstones in EU climate policy, while at the same time being market-based approaches, aiming at “creating” new commodities that will supposedly have a net-positive effect on Europe’s greenhouse gas emissions (Young, 2015).

The policies in this case are expected to be cases of similar systems, the EU legislative system being the system, and similar outcomes, based on the fact that they are both market-based approaches to climate mitigation and have as mentioned continuously been described as central policies by the EU-institutions and academics alike (Peters, 2013). This approach provides the opportunity to compare cases over time in a historical perspective and focus on the difference between the cases on their independent variables analyzed (Landmann, 2016). In relation to our general approach we, in relation to the meta-theoretical approach outlined earlier, apply an *abductive* research strategy moving back-and-forth between conceptualisation and empirical research.

In order to reduce the complexity of this comparative logic the explanatory and outcome variables have been summarised in the table below (Landmann, 2016):

Explanatory Variables:	The European Emission Trading System	Biomass as a sustainable energy source
“Stable discourse”		
“Market stability”		
Outcome Variable:	The European Emission Trading System	Biomass as a sustainable energy source
Climate Cornerstone	X	X

The variables presented in the framework will be interpreted through the theoretical framework based on a neo-gramscian approach, operationalised through a Critical Discourse Analysis (CDA) and borrowing concepts from Economic Sociology (ES). As mentioned in the literature review, this will be further explained through an operationalised theoretical framework later in this methodology section. We will apply Norman Fairclough’s (2010) version of CDA, which will be further explained later in this methodology section. Similar to the neo-gramscian approach, it is deeply rooted in similar questions about social reality (Fairclough, 2010; Crespy, 2015). In this context the purpose of the CDA is to reveal ideological elements, which legitimises certain aspects of the policies analysed here. Simultaneously, the task involves linking the discursive aspects or elements to the social

structure which is operationalised here to be the actors involved in the legislative process (Fairclough, 2010). As mentioned in the literature review, both policies are seen as instances of “market innovation”, ontologically conceptualised as deliberate politico-economic constructions rather than natural occurrences (Doganova & Karnøe, 2015). Furthermore, we expect to identify discursive tendencies previously identified as being prevalent at the EU-level such as; “ecological modernism”, “green capitalist” or “green growth” tendencies and discourses showing “embedded” neoliberalism (Fitch-Roy et al., 2019; Apeldoorn, 2009). These tendencies will not be assumed, but empirically accounted for in the analysis section.

Besides the CDA approach, ES based on the work of Fligstein (2001), will be used for analysing aspects of market stability and the vital role it plays in the policy-process (Fligstein, 2001). The theoretical framework will be operationalised later on in this chapter.

The comparative framework will be re-introduced in the comparative policy discussion of the thesis in order to outline and explain differences in the variables between the analyzed policies.

3.2.1 Data Collection

The collection of data for this thesis is mainly based on primary data in the shape of the different legal- and policy documents related to the political process over the two policies “lifespan”. The different legal and policy documents was mainly collected through Eur-Lex, the official database of EU law. Other primary data, in the shape of interviews, was used mainly for the purpose of background knowledge, seen as helpful due to the technical nature of the two cases. The secondary literature used for the mainstream literature review was found mainly by reviewing influential journals on European politics and administration, in the period of 2009-19. Conversely, political economy journals and other journals not seen as mainstream journals were also reviewed for the purpose of analysing critical work (Rosamond, 2016). Literature was also gathered searchin the REX library database through the use of logical demarcators such as “*European Union AND Climate Politics*” . Lastly, some literature was gathered based on the suggestions of our supervisor and some was found based on the readings of journal articles.

Secondary literature was also used in the analysis of the EU ETS, used mainly for the purpose of identifying key actors and developments in the political process.

In the biomass case, however, very little secondary literature regarding the political process seems to be available and therefore a higher reliance on news articles was deemed necessary. News articles are mainly taken from the database of the independent journalist

network, EURACTIV, due to their in-depth coverage of the EU policy process and the networks independent nature. Other news sources have also been utilised.

The somewhat loosely defined criteria for conducting a literature research, arguably makes it inevitable that we have left out valuable perspectives in our literature review, albeit this is not done in a structured way based on philosophical disagreements.

3.3 Methods

3.3.1 Critical Discourse Analysis

As a central analytical tool, discourse analysis has been used for the main purpose of analysing the different political documents gathered. Theoretically, this has been chosen because of our emphasis on the causal power of ideational aspects implicit in choosing a neo-gramscian framework. The main issue of concern here is to explicitly state otherwise implicit methodological decisions made when carrying out the discourse analysis, as it involves a strong(er) interpretive dimension when compared to other approaches (Crespy, 2015:105). Some debate has emerged concerning whether to regard discourse as a mental construct, related to agency, or as an empirical manifestation being the outcome of interactions between actors (Crespy, 2015:105). Theoretically speaking, it is considered here as being a non-dilemma in this thesis as our theoretical framework is rooted in approaches which emphasises the duality of structure and hence the answer to this perceived dilemma is a simple “both”. Methodologically speaking however, we treat discourse mainly as an empirical construct due to the material selection which underpins our analysis themselves being the outcome of complex inter and intra-institutional processes.

Out of the four main approaches to discourse analysis, *content, frame, policy narrative and critical discourse analysis*, we have found that the critical approach is most suitable for our analysis, as it is deeply rooted in the same kinds of questions about social reality as the neo-gramscian perspective (Crespy, 2015:108-109). Here we rely on the work of Norman Fairclough (2010:1) and his version of Critical Discourse Analysis (CDA) and his expressed aim to link language to social structure, through the study of power and ideology in contemporary capitalism. This is done due to the theoretical and metatheoretical similarities with the methodology used here. Fairclough’s (2010:3) approach adopts a similar definition of discourse as stated above, seeing discourse both as a *relational* construct with *external* relations (e.g. inter-institutional) and with internal relations such as the relation between worldviews and policy narratives. Discourse here is also defined as being *dialectic*, which is

related to its relational character, in that it is not separate from any other social object but “flow into” these, obvious examples being the role of discourse in defining social phenomena such as power, politics and language (Fairclough, 2010:4). Finally, the approach is rooted in critical realism operating with a realist ontology seeing the causal effects of social constructs, particularly discourse, as contingent (Fairclough, 2010:4-5).

The “critical” aspect of CDA is inherent in its relational and dialectical approach to social analysis, in its ability to *critique* existing discourses, its ability to identify *ideological* aspects of discourse and in the view of the particular CDA as constituting a discourse in and of itself acknowledging the social role and influence of academic research (Fairclough, 2010:9). While the relational and dialectical aspects have already been covered and are critical for being in opposition to “problem-solving” approaches as similarly argued in the literature review, the emphasis on *critique* and *ideology* begs expansion.

The emphasis on critiquing existing social structures and practices embedded in discourse, reflects the general ambition of critical theory to contribute towards emancipation.

The element of critique implicit in this thesis relates to the assumption, as presented in the preceding chapter, that a transition to a post-growth economy is necessary, while simultaneously analysing discursive and ideological elements which legitimises “green growth” policies or very limited climate mitigation efforts that works contrary to any post-growth strategy. Specifically the CDA approach to ideology seeks to “unveil” the implicit ideological positions in naturalised discourse, evident in this thesis regarding the assumed efficiency of markets and perceived benefits of the ETS scheme and the sustainability of biomass. Similarly to neo-gramscian theory, it is argued that so-called “ideological-discursive formations” (IDFs) characterises political institutions and that the dominance one IDF over others results in the “naturalisation” of the said IDF (Fairclough, 2010:26-27).

This is arguably similar to the gramscian notion of hegemony, whereby the discourse of one political project (similar to IDF) becomes “common sense” and hence *hegemonic* which often results in subsuming the concerns and content of other political projects beneath it (Apeldoorn, 2009). The consequential outcome of this view is that institutions can come to embody certain ideologies, “ideology” for analytical purposes understood as textual elements which “(...)contribute to constituting, reproducing and transforming social relations of power and domination” (Fairclough, 2010:28). This also entails that *power* is meant here to be equivalent to hegemony, that is, hegemony *in* and *over* discourse, as opposed to a material understanding of power often used in security studies or economic analysis of “market power” (Fairclough, 2010:28). Conclusively, the analytical purpose of applying CDA in this

thesis is to uncover ideological elements and how they legitimise certain aspects of the policies under study, and to relate these discursive elements to social structure, perceived here to be signified by the actors involved in brokering the legislative compromises on the two policies examined. Because we do not enter the interpretative aspects of the analysis with a “tabula rasa”, we expect to find discursive tendencies that have been previously identified as having primacy at the EU-level such as “green growth”, “green capitalist” or “ecological modernism” discourses and tendencies of “embedded neoliberalism” (Fitch-Roy et al., 2019; Apeldoorn, 2009). “Green growth” is especially expected here to be found as it relates to the widely-held belief that technological progress will eventually allow us to have an “absolute decoupling”, meaning that economic activity will no longer be associated by an increase in Greenhouse Gas Emissions (GHGs) and thus “the economy” is allowed to continue to grow which in turn will enable increased investments in said technology (Parrique et al., 2019).

Fundamentally, green growth has been associated with the belief that if one can put the “right price” on pollution and incentivise the right kinds of production, capital will make the green investments needed (Ferguson, 2015). We intend, however, to establish these tendencies empirically and not to assume them.

3.3.2 Interviews

The qualitative method of interviews has been found relevant to apply in this thesis, where the semi structured interview approach was applied when conducting the interviews with the different identified informants (Kvale & Brinkmann, 2009). This approach has been chosen since it allows for the possibility to formulate different interview guides designed to most effectively address the setting and field of expertise of each individual informant. Moreover, the semi-structured interview approach can be argued to be more open in its structure which allowed us to formulate questions which our informants had the opportunity to elaborate upon (Kvale & Brinkmann, 2009; Hammersley & Atkinson, 2007). This is due to the process which allows for the initiation of the interviews with broader and topical questions, while still having the possibility for inquiring further into interesting points (Hammersley & Atkinson, 2007). In addition, through our research process we gained some background knowledge which allowed us to identify our research topic, which contributed to criterias in narrowing down which informants we wanted to interview therefore enabling us to formulate interview guides based on a certain degree of knowledge within our informants area of expertise (Kvale & Brinkmann, 2009). The original intention was to conduct nine interviews which counts two interviews with experts on ETS and biomass respectively, two interviews with

informants representing environmental NGOs critical of the ETS and biomass policies and lastly two interviews with people working at EU level in the European Commission related to ETS and biomass. However, it should be noted that due to the recent election in the European Parliament it has been challenging to schedule interviews with informants, and we experienced several refusals for this reason. This reshuffling of the EU-institutions in the wake of the European Parliament election coincided with the timeline for writing this thesis, which is probably why we only heard back from the informant from the European Commission. This informant has knowledge of and works with ETS on a day-to-day basis. The interview with the informant working for the European Commission provided a different insight into the understanding of the European Commission's documents. Specifically, the informant could elaborate upon the questions we had for different documents published by the Commission, while he could explain technical terms in a more plain language by simultaneously provide insight into the institutions working methods and perspectives. The application rational behind these interviews has been to gather primary data as a means to obtain background knowledge of the two EU policies, while simultaneously we were made aware of important political events and social movements, decisions and organisations worth considering and documents worth collecting.

3.4 Operationalisation of the Theoretical Framework

3.4.1 Gramsci and the Struggle over Common-Climate-Sense

As stated in the literature review, the theoretical framework will be based on a neo-gramscian approach, through which we will aim to attempt a conjunctural explanation of our research question. Due to the neo-gramscian perspective being placed at a rather high level of abstraction, a so-called "grand theory", need for operationalising it to a lower level of abstraction in order to provide more analytical clarity when conducting the analysis has been identified. Specifically this will be done through explaining the empirical connotations of some of the neo-gramscian concepts, and through the use of Critical Discourse Analysis and insights from Economic Sociology.

The key or "master" concept used in the thesis is the concept of *hegemony*, through which we will attempt to explain the primacy of market-based approaches to EU climate mitigation, exemplified in this thesis by the EU-ETS and Biomass policies.

This "master concept" can be broken down into the subconcepts of *social forces* and *moral and political leadership* (Talani, 2016). These subconcepts can then be broken down to the

empirical indicators of political parties, governments, and civil society actors, all being signifiers of *social forces*. The identification of discourses related to the different groups, would then be signifiers of *political and moral leadership*. These all operate within the three gramscian social realms of *economic structure, civil society and political society*, an understanding of which would need to be kept in mind in order not to completely de-contextualise the analysis (Talani, 2016).

These realms can be signified by looking into the context of economic globalization, and especially the scope condition of the single market, the landscape of interest representation in the EU and the legislative system in the EU. These structures provide the context for our analysis. If we are able to identify a coherent group of social actors with recognizable set of ideational elements which ensures stability, or *consolidation*, or which is the cause of instability or *deconstruction*, we would see it as sufficient grounds for arguing that the neo-gramscian perspective at least partially explains the outcome and the content of the biomass and EU ETS policy processes. The process of doing so, will in large part rely on the CDA approach outlined in the earlier part of the chapter. The CDA approach allows us to investigate the link between discourse, power and social relations by examining ideological patterns textually and across time and institutional settings. This arguably ensures that we approach our empirical material in an abductive manner, rather than “begging the question” and conducting the analysis in an “a priori” manner, as we are reliant on the textual information contained in central texts of law and policy. While there is, as previously mentioned, a definite element of interpretation we have attempted to be explicit about this. Furthermore, we have adopted a philosophy of social science which insists on the inter-subjective character of epistemology and thus renders it nearly impossible to conduct social research without an element of interpretation. As outlined earlier, the CDA approach shares main assumptions with neo-gramscian theory and critical realist philosophy and thus ensures consistency in the link between philosophy of social science, theory and methods. Likewise, as is argued below, the Economic Sociology used here shares core theoretical assumptions with the neo-gramscian theory, ensuring that this somewhat eclectic theoretical framework remains philosophically consistent.

3.4.2 Ideas, Power and Exchange - Markets as Social Constructs

As mentioned in the literature review, we have found it relevant to utilise key insights from economic sociology in this thesis. These are primarily based on the work of Fligstein (2001). The central working assumptions are threefold. The first assumption, or historical argument,

is that *“markets are social constructs that reflect the unique political-cultural construction of their firms and nations”* (Fligstein, 2001:97). Secondly, and this is some opposition to neoclassical arguments and similar arguments found in EU discourse on markets, price-mechanisms are assumed to be the primary source of instability and hence markets are fundamentally characterised by recurrent crises (Fligstein, 2001:68).

Conversely, it is held that firms ability to avoid excessive competition emanating from price-mechanism (such as cost-cutting) and state’s ability to regulate this is the primary source of stability (Fligstein, 2001:70-71). In this thesis we argue that this perception is empirically demonstrated in the analysis on ETS.

Thirdly, and related to the first assumption, markets are sociologically imagined to be “fields”, meaning that they are characterised by actors which seeks to produce a stable world through (re)producing discourses, maintaining routines, and that these are mediated by social relations often, but not always, related to power (Fligstein, 2001:29-30).

On a lower level of abstraction, “fields” are seen as “policy domains” once we enter the world political economy where markets are, similar to political economy, seen as the product of contested political processes (Fligstein, 2001:38-39). Thus these policy domains can further be described as “structured arenas” where different organised groups compete for influence and control. These arenas are perceived to be structured around 1. the state’s ability to intervene in markets and 2. the relative power of social groups to dictate the terms of intervention (Fligstein, 2001:41-42). It is worth noting that this particular version of Economic Sociology discourses are, in a similar fashion to both critical realism and neo-gramscian theory, perceived to be of a causal nature (Fligstein, 2001:30). Finally, and similar to critical realism, actors are perceived to be reflective (the source of agency) but not necessarily self-aware and thus may produce results that are very unintended (Fligstein, 2001:30).

Of these three assumptions, the second one regarding the inherent instability of markets is of special importance to this thesis, as this provides the empirical source of market regulation and intervention. It is argued that the stability of markets is fundamentally dependent on the ability of public regulation, to create rules and laws that work in some uniform manner.

The central aim of this is to regulate the way in which market actors compete, both on a domestic, international and global level. It is argued that stable markets are dependent on four factors, 1.property rights, 2. governance structures, 3. rules of exchange. 4. conceptions of control; a conceptualisation of agency at the firm and intra-firm level. Furthermore, it is argued that the discourses which partly underpins these factors remain somewhat stable

during times of relative stability (Fligstein, 2001:32-25). While the commodification of a commodity, this is not what property rights relate to here as it is more concerned with the ways firms organise the rights to ownership (e.g capital-based vs democratic or public). The last factor listed above, conceptions control, is related to what strategies and discourses firms develop in order to ensure internal stability and to avoid competition enough to make them long-term players in the market. As we do not deal specifically with firm-level agency in this thesis, the concept will not be a primary analytical tool. The two remaining factors, rules of exchange and governance structures, are however emphasised to a large degree during the analysis and through the discourse analysis we will also show how the ideas underpinning our two markets of choice do (not) change over time.

Governance structures relates to the laws, regulations and institutions which governs the way market actors are allowed to compete, where the ability of regulators to do so effectively is a necessary condition for well-functioning markets. Regarding our last factor, rules of exchange, it seen as a stabilising factor when the rules are applied in a uniform manner, reducing uncertainty and complexity in the given market (Fligstein, 2001:33-35).

The role these uniform rules, or lack thereof, is a special point of emphasis in the analytical chapter on the EU ETS where the method of allocation of emission allowances has been a particular point of contention. In Biomass, governance structures or, again the lack thereof, regarding how to qualify sustainable biomass has been a larger point of contention and is therefore analysed more in depth. Conclusively, the Economic Sociology applied here is used to supplement the overall theoretical framework based on neo-gramscian political economy and philosophy of social science rooted in critical realism. We argue that there is logically consistent synergies in doing so, due to the shared emphasis on discourse as a causal mechanism and the power relations inherent in structuring social reality.

Lastly, the emphasis on markets as inherently crisis-prone obviously fits well with the marxist heritage of neo-gramscian political economy.

Sub-conclusion:

This chapter has outlined the methodology of the thesis, which takes the form of a comparative policy analysis and is approached in an abductive manner.

The data collection is primarily based on gathered primary data in the shape of legal and policy documents related to the political process of our two cases, EU ETS and the promotion of biomass as a renewable source of energy. The methodological framework is rooted in a critical realist philosophy of social science, and has developed a neo-gramscian framework operationalised through the method of Critical Discourse Analysis and borrowing concepts from Economic Sociology. Interviews were also conducted, primarily with the aim of getting an overview of the two rather technical cases. Lastly we have operationalised our theoretical framework, outlining how concepts will be used in the analysis which follows this chapter.

4. Analysis Part One - The European Union Emissions Trading System

This section will cover the first part of the analysis, concerning the creation of a market for Greenhouse Gas Emissions (GHGs) in the shape of the European Union Emissions Trading System (EU ETS). For analytical purposes we have chosen to divide the chronology of the EU ETS into four periods. These include the “pre-trading” creation period starting with the green paper published by the European Commission in the year 2000 and the “pilot phase” spanning the years 2005-07; the first effective trading period of the ETS starting from 2008 ending in 2013; the second trading period starting from 2013 ending next year at the time of writing in 2020; before we usher into the, on paper, the final period with the 4th trading phase going from 2020-2027. During these years the EU ETS has seen one major amendment in 2009, amending the original directive from 2003, several regulations clarifying allocation of allowances and the establishment of a Market Stability Reserve (MSR) established in 2015.

Finally the original Directive from 2003 is once again amended in 2018 which is the legal foundation for the forthcoming trading phase 4 of the EU ETS. We argue that the two main discourses entailed in the important pieces of legislation are rooted in the “green growth” discourse, which sees climate mitigation as sustaining future growth and a discourse which sees climate mitigation as an inherent threat to growth and competitiveness, with the latter as the dominant. The legislative outcome of the EU ETS political process is an example of a muddy compromise consisting of both these discourses, with a gradual but yet to be finalised move towards EU ETS legislation based on the “green growth” discourse. It is further argued that there is an overarching “pro-market” discourse present, which sees market-based climate mitigation as inherently cost-effective and compatible with protecting european competitiveness vis-a-vis international competition and preserving the integrity of the single market. Conversely discourses pertaining to the “degrowth” or “post-growth” persuasion, was left out of any of the examined legislation and other noteworthy political documents related to the legislative process. While the discourse analysis obviously does not give one the full analytical picture of the political process behind the EU ETS, we still argue that the discursive stability observed in this section of the analysis contributed to the somewhat stable legislative output and gradual move towards an EU ETS similar to what was originally envisioned in the green paper. This is especially more noticeable given the presence of large market instabilities during this period. From the vantage point of Economic

Sociology (ES), we argue that the instabilities seen in the EU ETS is unsurprising. Not only because this is seen as an inherent tendency in markets, but because the muddy compromises surrounding the rules of exchange and governance structures have led to uncertainty and hence created market instabilities, as would be predicted by this framework.

4.1 Creating a Market for Emissions and the Pilot Phase (2000-07)

In the 2000s, the Kyoto Protocol entered its implementation stage and was the justification for a substantial amount of climate-related legislation at the EU level, with the EU-ETS being one example. The first political move came soon after the Kyoto Protocol was signed in late 1997, with the EU Commission Communication in June 1998 stating that the EU should set up an emissions trading scheme by 2005, the same year as the eventual beginning of the pilot phase (European Commission, 1998). Prior to this implementation the EU was actually an outspoken sceptic of the different flexibility mechanisms suggested at the international level, including emissions trading which also met resistance by environmental NGOs and industry, arguing that it would be ineffective and merely trading pollution (Wettestad & Jevnaker, 2016; Skjærseth & Wettestad, 2010(b)). The main concern was that the main emitters would be able to avoid responsibility by outsourcing it and the European Commission instead attempted to introduce an EU carbon tax around this period. However, this attempt failed and emissions trading was included in the Kyoto Protocol through US leadership, and later a majority consensus arrived in the EU and the EU-ETS was developed (Wettestad & Jevnaker, 2016; Müller & Slominski, 2013).

The first document published on the matter is the *“green paper on greenhouse gas emissions trading within the European Union”*, which was based on the perceived US success in creating a “cap and trade” system for SO₂ (Sulfur Dioxide) as a way to cope with damage done to the ozone layer (European Commission, 2000). Furthermore, the EU had some limited experience with other allowance programmes that included elements of market-based tradeability such as fish and milk quotas under the Common Fisheries and Common Agricultural policies (European Commission, 2000). Here the EU ETS was thought of with the Kyoto goals in mind, -8% in aggregate GHG emissions for the EU, and in relation to the three Kyoto mechanisms - specifically the mechanism related to global emissions trading - where the European Commission (2000:9-10) held that, *“the involvement of companies in emissions trading represents a unique opportunity for a cost-effective implementation of the Kyoto commitments”*. This is further reflected in the design of the EU ETS in accordance with the global emissions trading system envisioned under the Kyoto

protocol: *“It is very important, therefore, to design a domestic emissions trading from the outset in such a way as to be open to gradual extension, in terms of geographical, economic sectors and gas coverage”* (European Commission, 2000:10).

Thus from the beginning of the political process we see implicit ideological elements of what has been identified in the literature as “green capitalism” (e.g. Fitch-Roy, 2019).

The implicit part identified here, is the aspect related to the perceived effectiveness of market flexibility as illustrated here through the global trade of emissions will lead to a cost-effective reduction in emissions, thereby exerting a belief in the general allocative efficiency of markets unto an area which is close to unknown. I.e it is hard to argue that one perceived instance of a market-led reduction in sulphur emissions or experience in trading milk or fish quotas is scientifically hard evidence for an expansive program such as the EU ETS. This line of reasoning is also not prevalent in the report. Furthermore, elements of *neoliberalism* are arguably also identifiable as a global market for emissions, while complicating the regulatory setup greatly, is seen as inherently desirable and can therefore be interpreted as seeing it as desirable for regulation being done on the basis of free and global markets. A kind of discourse identified as essential within neoliberalism by Fairclough (2010).

The European Commission envisioned a centralised system with the commission itself bearing the main responsibility for enforcing the “cap” part of the “cap and trade” system, as centralisation was seen as a way to ensure that an excess of allowances did not occur (Wetttestad & Jevnaker, 2016). In fact the ability to ensure a well-functioning “cap”, was seen as the fundamental reason the EU ETS would ensure environmental benefits: *“It is this overall limit that provides the environmental benefit of the scheme”* (European Commission, 2000:8). However, key member states, such as the UK and Germany, as well as industry met this proposal, dubbed “auctioning”, with a critical response, forwarded in position papers as well as in consultation meetings, making the Commission proceed with a Directive proposal later in October 2001, differing significantly on important points on design options provided in the Green Paper (Skjærseth & Wetttestad, 2010(a)). Conversely, most member states preferred a decentralised system with member states being in charge of National Allocation Plans (NAPs) setting out the amount of allowances on a member-state basis. Here, the commission would instead serve as a watchdog overseeing these NAPs (Wetttestad & Jevnaker, 2016). One example of this disagreement between the European Commission and central member states, was in 2005 where legal disputes ensued between the UK and the European Commission regarding the review of the UK’s NAP (EURACTIV,

2005). Similarly, when the EU ETS was revised in 2009, the Commission rejected various NAP's resulting in several member states accusing the Commission to have, "(...)overstepped its scope of discretion" (Müller & Slominski, 2013:1435). Important to note here is that the EU-ETS has since been characterised by disagreements related to the issue of over-allocation, a probable consequence of the initial reliance on NAPs. Perhaps the most vivid illustration of this is that member states were to decide themselves on the amount of "banking" of allowances stemming from the pilot phase transferring into the first "proper" phase of the EU-ETS (Wettestad & Jevnaker, 2016). From the vantage point of Economic Sociology (ES), this is problematic in relation to making markets stable, as the uniform application of the rules of exchange are seen as central in providing stability (Fligstein, 2001). Instead of a uniform approach, each individual member state would have a lot of leeway in allocating their free allowances.

This was in some opposition to the initial ideas presented in the green paper, where a "community approach" is preferred and where a member-state based system is seen as promoting uncertainty: "*Different national emissions trading systems could raise serious difficulties concerning state aid and new companies entering into the market. This situation would likely raise uncertainty both for Member States and for firms*" (European Commission, 2000:5). Thus the commission had concerns both about the integrity of an imagined emissions trading system with significant amounts of national control and indirectly regarding the integrity of the single market because of concerns regarding the potential distortions to competition. Regarding the latter, it was further elaborated that debates regarding emissions trading should be "(...)including [of] the potential impact on the internal market" and that "(...)issues related to state aid and fair competition in respect of which the Community unquestionably has a role to play" (European Commission, 2000:7). This concern about preserving the proper market mechanisms is reflected in the stated economic rationale behind the ETS which seeks to create maximum market flexibility to achieve a positive environmental effect: "*the key economic rationale behind emissions trading is to use market mechanisms to ensure that emissions reductions required to achieve a pre-determined environmental outcome take place where the cost of reduction is the lowest*" (European Commission, 2000:8). Again the emissions scheme was seen to be desirable based on a perception, or belief, that market mechanisms tend to allocate resources in a way that is cost-efficient. Also, neoliberal concerns regarding distorting competitive mechanisms in the single market are displayed here, the neoliberal aspect shown in the emphasis on governing within the dictates of the single market. I.e, if market-mechanisms are utilised properly it is

believed to lead to cost-efficient climate mitigation and intrusion by public authorities is often seen as inefficient. The preference that the market should discipline the state, and not the other way around, has also been considered a key element of neoliberalism (Fairclough, 2010).

Lastly, the green paper emphasised the connection between the EU-ETS and the Kyoto-ETS between Annex B countries, continuing the logic of market flexibility with the larger Kyoto-ETS creating a larger scale and hence more flexibility, also through the project-based mechanisms Joint Implementation and the Clean Development Mechanism (European Commission, 2000). This was later reflected in Directive 2004/101/EC which explicitly linked the original EU-ETS directive from 2003 *“in respect of the Kyoto Protocol’s project mechanisms”*, having already acknowledged the legitimacy of emissions trading with so-called “Annex B” countries in the original directive as part of the EU being a party to the Kyoto Protocol (European Union, 2004:18). To summarize, the green paper envisioned an emissions trading system with maximum market flexibility that did not compromise market mechanisms in the single market, limited sector coverage and centralised governance structures at the community level. It displayed a firm belief in the perceived added value of utilising market mechanisms in climate governance, with very few reservations. Potential monopoly abuse was mentioned as the main market-based concern, but it is argued that this potential design flaw is *“(...)greatly reduced by increasing the number of participants in a trading scheme”* without elaborating on whether or not the EU-ETS will contain enough market participants, but this seems to have been implied (European Commission, 2000:20). Lastly, several concerns regarding the integrity of the single market was expressed, with a clear emphasis that the EU ETS should not compromise the single market.

As the first piece of legislation underpinning the EU ETS, Directive 2003/87/EC was passed, effectively adopting the EU ETS and putting into motion the pilot phase of the programme (European Union, 2003(a)). As compared to the Green Paper, the founding directive is in similar “pro-market” discourse but differs on several important administrative aspects, most notably on the method of allocation. As discussed earlier, this was an aspect also noted in the Green Paper to be of potential controversy. The directive emphasises that the, *“community provisions relating to the allocation of allowances by the member states are necessary to contribute to preserving the integrity of the internal market and to avoid distortions of competition”* (European Union, 2003(a):32). In other words, it was important to the central negotiating partners that this particular piece of climate mitigation policy did not

compromise the norms in the institution that is the European Single Market. Here it is important to note that while not compromising the single market perhaps seems obvious from a purely legalistic standpoint, it has a clear ideological dimension that signifies a certain priority and discourse on *why* it is important to preserve the single market. In the above quote, the emphasis is on reducing competition, as competition is implicitly seen as the factor that enables markets to be effective. This discourse, as in the Green Paper, goes beyond European markets and emphasises the perceived importance of the Kyoto Project Mechanisms: *“Project-based mechanisms including Joint Implementation (JI) and the Clean Development Mechanism (CDM) are important to achieve the goals of both reducing global greenhouse gas emissions and increasing the cost-effective functioning of the scheme”* (European Union, 2003(a):33). Thus the EU ETS was also in the key founding directive seen as being potentially global in scope through its inclusion of the various Kyoto mechanisms. This is further legally implemented through Directive 2004/101/EC (European Union, 2004) with the purpose of complementing the original directive which links the EU-ETS to the Kyoto Protocol project mechanisms. Mechanisms that would later be suspended and eventually scrapped from the ETS system, in the forthcoming 2021-2030 period. Here the cost-effectiveness of such an approach is again emphasised: *“(…)project-based mechanisms for fulfilling obligations as from 2005 will increase the cost-effectiveness of achieving reductions of global greenhouse gas emissions(…)”* (European Union, 2004:18). Thus CDM is perceived as a “win-win” solution, since it reduces the cost of climate mitigation for the global north, while simultaneously bringing “green capital” to global south (Böhm et al., 2012). Thus the central discursive elements regarding the efficiency of markets, the desirability of global markets and the concerns regarding compromising the integrity of the single markets are kept well intact in the founding directive of the EU ETS. This desirability of a global carbon market is further emphasised in the European Commission communication of 2006 - “Building a Global Carbon Market” - where these global ambitions are repeated (European Commission, 2006). Thus there is a stable discourse in the beginning of the EU ETS surrounding the potential global scope and deepening of emissions trading, a discourse which will later disappear and which is not envisioned to be part of the future of the EU ETS.

In 2005, the EU ETS became operational, the initial first phase being dubbed a “pilot phase” intended to test the system and establish its infrastructure (Oberthür & Pallemmaerts, 2010). This meant that the member states freely could choose how many EU Emission Allowances (EUA) to distribute in total and decide to each plant within their territory through the

preparation of national allocation plans (NAPs) (Ibid.). So in practice the “cap” part of the “cap and trade” system, was in practical terms 25 different caps (pending the accession of Romania, Bulgaria and Croatia), with very limited degrees of harmonization. During the pilot phase of the EU-ETS nearly all EUAs were distributed for free while being based on historic emission levels, what is also known as “grandfathering”, preferred by a majority of the member states (European Commission, 2014(a); Skjærseth & Wettestad, 2010(b)). A point of critique here is that this allows historically high-emitting societies which have contributed the most to anthropogenic climate change, to be able to continue in a somewhat similar fashion (Knight, 2013). Auctioning was seen as the more “neutral” approach by the European Commission in the Green Paper, due to it being market-based and therefore perceived to give market actors a so-called “level playing field”. While this may be somewhat true from a firm-perspective, this ignores the aspect of market power emphasised by ES; and the fact that firms with a large share of market power are not evenly distributed across member states thereby in practice producing similar dilemmas as “grandfathering”. Nevertheless, the allocation method of “auctioning”, mentioned in the green paper and in later European Commission “carbon market reports” as an efficient way of allocating emissions due to it being based on market demand and supply, played a marginal role in this initial phase (European Commission, 2000; European Commission, 2012(a)). At this point CO₂ emissions were covered from plants for power and heat generation, but also in energy intensive industrial sectors such as steel, iron, oil refining and cement etc. A penalty was imposed on companies in the case of non-compliance (European Union, 2003(a)). Based on the “carbon market reports” this does not seem to have been a noticeable point of contention in law or in practice, as very few cases of non-compliance have been observed (e.g. European Commission 2012(a)); European Commission, 2015(a)). This initial phase was supposed to contribute to the establishment of a price-market for EUAs, free trade throughout Europe and the creation of the infrastructure for monitoring, reporting and verifying (MRV) emissions from the covered plants (European Commission, 2012(a)).

When the first real world emission data was published, which took place after the first year of operation, it was concluded by European Commission that an excessive amount of EUAs had been distributed (European Commission, 2014(a)). This was probably unsurprising to policy-makers given the previously mentioned absence of a *single* cap, obviously an essential part of a “cap and trade” system such as the one envisioned here (Wettestad & Jevnaker, 2016). The excess of allowances led to a consequential fall in the price of EUAs due to oversupply and eventually dropped to near zero at the end of the phase (ibid.). This

resulted in more strict review arrangements for national allocations in the following period of 2008-2012 and the first reform of the EU ETS (Oberthür & Pallemmaerts, 2010). Also, in the first “Carbon Market Report” of 2012 (European Commission) the global financial crisis of 2008-2009 was also given a large part of the “blame” for the dropping prices, while the earlier lauded concept of Project Mechanism Credits was seen as contributing to this excess of circulating allowances. Correspondingly it was perceived by the legislative majority that the system did not produce substantial transformations or movements towards renewable energy sectors or low carbon technologies as was originally envisioned (Oberthür & Pallemmaerts, 2010).

The global financial crisis was unexpected by many and has fostered intense debates regarding the nature of contemporary capitalism and the efficiency of “free” markets, debates which there will not be room to cover in any serious debt here. However, one may conclude that the market flexibility that seems to be the fundamental rationale for creating the EU ETS in the first place, was in this case, at least implicitly, not seen by the European Commission and later on the legislative majority as being flexible enough to adjust to the new economic realities. Therefore, a widespread perception of the need for more EU (government) intervention in the newly created carbon market, rose the following decade. These developments are not difficult to interpret from the vantage point of ES, as markets are seen to be liable to “undercut” themselves through price-mechanisms in the absence of developed government regulation (Fligstein, 2001). Ideologically speaking, this seemed to be somewhat hard to interpret for the European Commission, as the price-adjustment measures suggested in the first carbon market reports was seen to fundamentally alter the market-based EU ETS (European Commission, 2012(a)). From an ES perspective, this type of government intervention is not only seen as a natural part in the development of markets, but often as a necessary part in the development of stable markets (Fligstein, 2001). The continuing plateauing of prices would later on also be the justification of “back-loading” measures, defined as the temporary withdrawal of allowances, and the permanent allowance-volume adjustment mechanism - the Market Stability Reserve (MSR). Both will be covered in the section below.

4.2 Price Collapse During the Second Trading phase and the 2009 Reform (2008-12)

Around the time of preparation for the first reform of the EU ETS, decision making was often at the level of the European Council which has been seen as an unusual move, signalling the perceived importance of the policy and hence the political prestige signified by its

potential collapse of which there was allegedly widespread concerns around this period (Wettestad & Jevnaker, 2016) The EU-ETS was reformed through the 2009/29/EC Directive hereby amending the original 2003/87/EC Directive (European Union, 2009(a)).

A number of elements regarding the amendment is noticeable:

First and foremost this revision of the original EU ETS directive from 2003 introduced a “single cap”, related to an increased harmonisation of NAPs and a higher reliance on auctioning with an annual decrease in the “cap” known as the Linear Reduction Factor related to the EU’s overall climate commitment (Müller and Slominski, 2013). Furthermore, some of the funds gathered from auctioning of allowances were designated to a funding mechanism named NER300, which was meant to promote innovative projects (European Commission, 2015(b)). It was allowed for businesses to use credits from the CDM and JI within the Kyoto Protocol from the first phase, which resulted in 1.4 billion tons of CO₂ equivalent credits on the market, except for projects related to forestry- and agricultural activities and nuclear facilities (European Commission, 2014(a)). During this second phase Norway, Iceland and Liechtenstein also agreed to join the EU ETS, although they have yet to auction allowances at the time of writing (European Commission, 2018(a)). From the 1st of January 2012 and onwards, the scheme was widened to obtain flights with routes inside the borders of the EU-ETS countries and also flights from third countries, something which was eventually scrapped (Birchfield, 2015)The brief explanation is that including third-country aviation was first done on the basis of NGO and industry lobbying, the first demanding climate mitigation within aviation and the latter asking for a level playing field, but this decision was however later reversed as part of EU negotiation strategies at the UNFCCC level (Staniland, 2012; Birchfield, 2015). Current developments, or lack thereof, has been done within the International Civil Aviation Organisation (ICAO), something which will be addressed later on. Auctioning was also argued to have become the “default” although it would still only make up around half of allowances allocated during this phase, with a number of other methods based on free allocation and international credits still being applied as covered later in this chapter (European Commission, 2015(b)). Around this time the EU was, like most other economies, experiencing a financial crisis-induced economic recession with negative growth, rising unemployment and rising private and public debt. It has often been argued that the impact of the crisis caused a big setback on the climate mitigation ambitions of the EU, due to “economic” concerns being of a primary concern (e.g. Skovgaard, 2013; Müller & Slominski, 2013). While this probably exacerbated disagreements, the argument put forth here is that discourse surrounding the negative

impacts of climate mitigation on the economy remain stable even well after the crisis. Also, around this time ideas regarding “green keynesianism” was seen by some as a natural solution to the multiple crises of the contemporary economy, i.e using climate-related stimulus packages to correct macroeconomic imbalances (Tienhaara, 2014). This is simply to say that while this narrative of the perceived “impossibility” of mitigating climate change during an economic perhaps seem natural to many observers now, our informant from the DG CLIMA described as an “iron law”, the lack of priority given to climate policy during this period was a political choice, not a technical exercise (Appendix, C). During this time, a blocking minority made up of most of the Central Eastern European Countries (CEECs) was in opposition to the self-named Green Growth Group (GGG) which included Belgium, Denmark, Estonia, Finland, France, Germany, Italy, the Netherlands, Portugal, Slovenia, Spain, Sweden and the United Kingdom (Wettestad & Jevnaker, 2016). Germany, however, was seen as a fence sitter being in the middle of these two large groups until a change of government brought the social-democratic SPD into the government coalition, replacing the conservative-liberal FDP (ibid.). Furthermore, detractors from the CEECs have also been identified at this point, where it has argued that the main strategy to break this policy deadlock has been so-called “time-based” strategies which simply moves the concessions given to a point in the future (Müller & Slominski, 2013).

The muddy compromise which resulted from these minor changes in alliances, is perhaps best shown by the chosen methods of allocating of allowances, with free allocation still playing a large role as illustrated below:

Table 4.1 - Free Allocation by Sector

Share of free allocation calculated based on benchmarks per sector	2013	2014	2015	2016	2017	2018	2019	2020
Electricity production	0%	0%	0%	0%	0%	0%	0%	0%
Industry sectors	80%	72.9%	65.7%	58.6%	51.4%	44.2%	37.1%	30%
Industry sectors deemed exposed to carbon leakage	100%	100%	100%	100%	100%	100%	100%	100%

(Source: European Commission 2015(b))

While the electricity sector will primarily be under full auctioning, there is a large asterisk attached to this procedure as ten member states perceived to be of a significantly lower

income level will receive free auctioning based on performance benchmarks under Article 10c (European Commission, 2015(a)). That is, the number of allocations will be based on the productivity of the different sectors based on above average performers so that it will, “(...)enable investments in the modernisation of the electricity sector in certain member states” (European Commission, 2015(a):15). This means that a company not being able to live up to these benchmarks, will need to buy the rest of their allowances at market prices. The amount of free allocation is then deducted from their auctioning share, meaning that they are not additional allowances (European Commission, 2015(b)). Eight out of ten eligible member states have chosen to make use of this option, with the lions share allocated to Poland as illustrated in the table below:

Table 4.2 - Free Allocation under Article 10c

MS	Number of free allowances requested by Member State		Maximum number of allowances per year							
	2013	2014	2013	2014	2015	2016	2017	2018	2019	Total
BG	11 009 416	9 779 243	13 542 000	11 607 428	9 672 857	7 738 286	5 803 714	3 869 143	1 934 571	54 167 999
CY	2 519 077	2 195 195	2 519 077	2 195 195	1 907 302	1 583 420	1 259 538	935 657	575 789	10 975 978
CZ	25 285 353	22 383 398	26 916 667	23 071 429	19 226 191	15 380 953	11 535 714	7 690 476	3 845 238	107 666 668
EE	5 135 166	4 401 568	5 288 827	4 533 280	3 777 733	3 022 187	2 266 640	1 511 093	755 547	21 155 307
HU	7 047 255	0	7 047 255	0	0	0	0	0	0	7 047 255
LT	322 449	297 113	582 373	536 615	486 698	428 460	361 903	287 027	170 552	2 853 628
PL	65 992 703	52 920 889	77 816 756	72 258 416	66 700 076	60 030 069	52 248 393	43 355 049	32 238 370	404 647 129
RO	15 748 011	8 591 461	17 852 479	15 302 125	12 751 771	10 201 417	7 651 063	5 100 708	2 550 354	71 409 917
Total	133 059 430	100 568 867	151 565 434	129 504 488	114 522 628	98 384 792	81 126 965	62 749 153	42 070 421	679 923 881

(Source: European Commission 2015(a))

This is described in the Directive as being for the “(...)purpose of solidarity and growth in the community” (European Union, 2009(a):65). While the aspect of solidarity is somewhat clear, it seems hard to justify the large share given to Poland on this basis alone. This is related to the allocation concept of grandfathering, which implicitly allows historically high emitters to stay at a high level (Knight, 2013). In this case it secures Poland almost six times as many freely allocated EUAs when compared to Romania, a country with a significant less amount of wealth, despite having only roughly twice the population. If one regards GHG emissions

as a “commons”, i.e. a public good, it is hard to justify the above distribution based on solidarity alone. Of course if one accepts “grandfathering” as a legit allocation method, there is a solidarity aspect in alleviating some of the perceived pressure of (relative to the EU median) lower-income countries. Although one might find it confusing not to find countries such as Greece (included in 2018) and Portugal on the list, who display similar econometrics to several of the above member states. The legal basis for not selecting these and similar countries, is a range of metrics based on the state of the national power sector in question, that are combined with the metrics on economic development (see European Commission, 2015B:36). These seem to have been developed in order to “fit” the blocking minority and thereby to lure detractors from the group in order to break policy deadlock. Similar arguments were advanced by the informant from the European Commission (Appendix, C).

Another striking addition to the free allocation scheme(s) is the concept of *carbon leakage* defined in the directive in the following manner (European Union, 2009(a):66):

“In the event that other developed countries and other major emitters of greenhouse gases do not participate in this international agreement, this could lead to an increase in greenhouse gas emissions in third countries where industry would not be subject to comparable carbon constraints (carbon leakage), and at the same time could put certain energy-intensive sectors and sub-sectors in the Community which are subject to international competition at an economic disadvantage.”

Thus there is a perceived direct correlation between more ambitious climate legislation and economic losses, in terms of industry being either outcompeted or relocating to other territories. Framed in the Carbon Market Report of 2015 as *“industries transferring production to third countries with laxer constraints on greenhouse gas emissions, leading to an increase of emissions globally”* (European Commission(a):11).

We interpret this to be a reflection of the predominant perception amongst the CEEC coalition member states, that there is a significant trade-off between economic prosperity and climate mitigation. Furthermore, preliminary discussion at this time led to a divide in main positions, which implied that many key countries, Germany for instance, underlined the likely issue of global “carbon leakage” from energy-intensive industries if continued guaranteed free allowances was not promised to these, since these strongly opposed to introduce auctioning (Ibid.). This resulted in the European Parliament, in October 2008,

having registered over 160 groups lobbying for free allowances (Skjærseth & Wettestad, 2010(a)).

This can also be interpreted as a reflection of a *neoliberal* approach to regulation, namely that it should be done within the “disciplinary” effects of global markets. This is, nevertheless, the effect of this approach in regards to the lack of climate mitigation measures. Not only do these sectors where “(...) *electricity constitutes a high proportion of production costs(...)*” receive “(...) *100% of allowances free of charge(...)*”, they are also subject to dispensation of the EU state aid rules and can therefore more easily receive state-aid as “(...) *compensation for indirect carbon costs.*” (European Commission, 2017(b):15).

The conditions and aim of these special state aid rules are further elaborated in the communication on state aid under the EU ETS, which state that, “(...) *the primary objective of State aid control in the context of implementation of the EU ETS is to ensure that State aid measures will result in a higher reduction of greenhouse gas emissions than would occur without the aid and to ensure the positive effects of the aid outweigh its negative(...)*” (European Commission, 2012(b):6).

Thus in the context of a very low price development of EUAs, it was decided to compensate certain industries with free allowances and the possibility of state aid. There a certain amount of discursive ambiguity to such an approach. While protecting EU competitiveness seems to be the primary aim, placed above decarbonising sectors which consumes a lot of electricity, it is nevertheless done in a manner which would allow member states a higher degree of intervention in the market. While this is done in a sector by sector approach, consistent with the usual EU conception of how to provide state aid, it nonetheless allows for a more state-based approach to ensuring EU competitiveness. This is arguably reminiscent of the dynamics inherent in Apeldoorn’s (2009) concept of embedded neoliberalism, as state-aid needs to be done with the least amount of distortions to competition, thus being subsumed to market concerns. Also the context of international competition is taken as an unchangeable given, phrased almost as a direct obstacle to ambitious climate mitigation. This is in some contrast to earlier discourse regarding the flexibility seemingly afforded by international markets, as evident by the promotion of the Kyoto Mechanisms, where increased interaction of international markets was seen as a cost-efficient approach. While these two aspects are not directly comparable, there seems to be somewhat of an internal contradiction in the simultaneous promotion of expansion of international carbon markets and the perception of the need for strong protective measures which has the unfortunate effect of less climate mitigation efforts. But perhaps this contradiction is at the

heart of the neoliberal approach, which seem to simultaneously seek to expand markets and discipline states through this expansion (Fairclough, 2010). Regardless, the Kyoto Mechanisms are still widely promoted in the directive, even considering bilateral action: *“(...)agreements, which may be bilateral or multilateral, could enable projects that generated ERUs until 2012 but are no longer able to do so under the Kyoto Framework to continue to be recognised in the community scheme”* (European Union, 2009(a):67).

The other side of the compromise, promoting EU ETS reform, can perhaps be seen in the wording which the directive has regarding *auctioning*: *“Auctioning should therefore be the basic principle for allocation, as it is the simplest, and generally considered to be the most economically efficient system.”* (European Union, 2009(a):65). Although free allocation would still continue to make up, on average, 43% of the total allocation to industrial activities during phase three (2013-2020), there is a formal move to auctioning as the default allocation method (European Commission, 2015(b):24). In practice, it will take until 2027 before the entire industrial sector is subject to full auctioning and the member states which are allowed to allocate free EUAs to their electricity sectors, will be able to do so under the entire phase 4 period (2021-2030), likewise for the carbon leakage sectors as envisioned by the 2018 amendment (European Union, 2018(a); European Commission, 2017(b)). Thus the EU ETS are some years, in fact an unknown amount, away from relying purely on auctioning as was originally envisioned in the green paper. Overall the document seems to be characterised by the two main discourses of the two camps: It contains provisions which are intended to protect certain industries and member states from what would appear as mild regulation on the surface, while also at the same time being characterised by the pro-market discourse, typical of the Green Growth Group member states. In other words, when market-based climate mitigation policies are perceived as a threat to industry, it seems to be because of the climate and not the market content of the policy. While the EU ETS Directive of 2009 is merely one example of prioritising European Competitiveness over climate mitigation, the Directive contains a more overall example of this (European Union, 2009(a):64:)

“In order to enhance the certainty and predictability of the Community scheme, provisions should be specified to increase the level of contribution of the Community scheme to achieving an overall reduction of more than 20 %, in particular in view of the European Council’s objective of a 30 % reduction by 2020 which is considered scientifically necessary to avoid dangerous climate change.”

As is well known, this target was later reduced back to the original 20% because of the failure to reach a global agreement at the COP15 meeting in Copenhagen (Skovgaard, 2013). This failure was then used by some of the more conservative member states to legitimise not meeting these “scientifically necessary” goals, due to concerns regarding European competitiveness (ibid.). Thus there seems to be some generality regarding the discourse on international competition, treating it as a structural constraint and by extension treating competitive adjustments as a necessity. This is often phrased as “(...)addressing the competitiveness concerns of industry in a globalised world” (European Commission, 2019). This has also been argued in the area of international trade, where it is argued that actors treat economic globalization, and the competitive circumstances it produces, as structural constraint because they believe to be so - and so in practice it becomes a structural constraint (Siles-Brügge, 2014). This seems very well to be the case in the 2009 directive, illustrated by the concept of *carbon leakage*.

In terms of the “pro-market” discourses established earlier, there are not many additional noteworthy sections besides occasional references to “(...)minimise distortions of competition with the Community”, referring to intra-community competition, and similar statements regarding the integrity of the single market (European Union, 2009(a):66). This is perhaps unsurprising given the fact that the directive merely amends the existing one. The overall direction of the EU ETS and the founding market-based ideas is however clearly expressed, which then is used to justify further harmonisation:

“While experience gathered during the first trading period shows the potential of the Community scheme and the finalisation of national allocation plans for the second trading period will deliver significant emission reductions by 2012, a review undertaken in 2007 has confirmed that a more harmonised emission trading system is imperative in order to better exploit the benefits of emission trading, to avoid distortions in the internal market and to facilitate the linking of emissions trading systems. Furthermore, more predictability should be ensured and the scope of the system should be extended by including new sectors and gases with a view to both reinforcing a carbon price signal necessary to trigger the necessary investments and by offering new abatement opportunities, which will lead to lower overall abatement costs and the increased efficiency of the system” (European Union, 2009(a):64).

Thus the discourses established earlier remains stable throughout this period and the second phase is even believed to produce “significant emission reductions,” despite it being almost exclusively based on the free allocation from the National Allocation Plans (NAPs) and therefore not as much the “carbon price signal” which is supposedly the source of reductions (European Commission, 2015(b)). Still, there is a perceived need to strengthen these almost non-existing price signals, in order to provide more of the right incentives. These sentiments are echoed in the first *carbon market report* of 2012, in that “*The European Emissions Trading System (EU ETS) has produced since its start an EU-wide carbon price signal that influences daily operational and strategic investment decisions*” (European Commission, 2012(a):3). The EU ETS is seen as “(...)critical in driving investments in a wide range of low carbon technologies” and that “(...)the EU ETS is widely perceived as a liquid market with a functioning infrastructure and inspires an increasing number of countries to follow the European lead(...)” (European Commission, 2012(a):3). Overall, there seems to be an overwhelming institutional confidence in the climate mitigation abilities of this new market.

However, the report attributes most of the causality reduced emissions in the period to the financial crisis of 08-09 and the ensuing “great recession” as the “major cause of these strong emissions reductions” (European Commission, 2012(a):3). Still, a steady perception in the virtues of the EU ETS seems to remain, only slightly challenged by the continued low prices which was sustained throughout the vast majority of the next trading period.

4.3 Public Intervention to Get the “Prices Right” - Backloading and the Market Stability Reserve During the Third Phase of Trading (2013-2020)

During the end of the second phase of trading (2008-12) it was suggested by several NGOs and later by the Commission itself that the EU-ETS had an excess circulation of around 1.4 billion EUAs (Wettstad & Jevnaker, 2016). The number would later be perceived to be over 2 billion excess allowances in the European Commission’s (2012(a)) first *carbon market report*. The dramatic drop in demand for emission allowances was as mentioned above seen to be primarily because of the financial crisis and the ensuing great recession. The general situation has been described in the scholarship as a situation where “*Widespread concern arose about the instruments ability to drive change*” (Fitch-Roy et al., 2019:7).

The surplus in supply was perceived to have several sources, most of them related to regulatory provision such as banking of free allowances carrying over to phase 3 and funding for the NER300 programme (European Commission, 2012(a)). Perhaps more noticeable is the perception that “hedging” in the power sector, protecting oneself against future price changes, was also seen as a factor and that the international credits earlier

described as important cost-effective mechanisms was now seen to be a “(...)major driver for the build-up in surplus” (European Commission, 2012(a):9). It is even suggested that in “phase 4 the regulatory framework could be crafted in a manner that initially allows for no or much more limited access to international credits” (European Commission, 2012(a):9). Thus there has been a rather strong change around this time in the perception of the role of international credits and it is relevant to note that the increased market flexibility offered by the international credits are actually seen as contributing to the malfunctioning of the market. While the term “market failure” is not used here, it would be a fitting description. Our informant from DG Climate Action also describes the role of third country emissions monitoring as lacking trust and transparency, underlining the challenges there would be to any type of external cooperation within the EU ETS (Appendix, C). Connie Hedegaard, former EU Climate Action Commissioner, also concluded that, “many of these CDM projects have a total lack of environmental integrity” (Böhm et al., 2012:1623). From an ES perspective, it is relevant to note how other actors besides market actors in practice shape the development of markets to a large degree and how perceived disagreements in market norms makes it difficult for markets to have stability. Also, in practice these “global markets” were essentially dominated by exchange with two countries, China and Ukraine, as shown in the table below. “CERs” and “ERUs” refer here to two types of credits related to the Kyoto mechanisms.

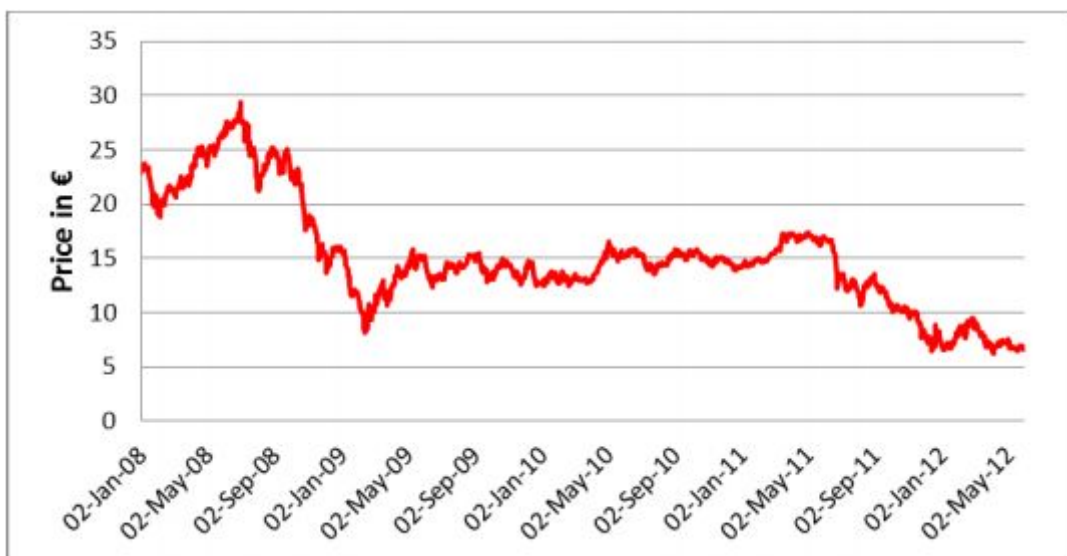
Table 4.3 - Distribution of International Credits

International credits exchanged by end June 2018	million	percentages	International credits exchanged by 30 June 2018	million	percentages
CERs	243,66	55,91%	ERUs	192,07	44,09%
China	181,41	74,45%	Ukraine	147,69	76,89%
India	15,78	6,48%	Russia	32,06	16,69%
Uzbekistan	9,44	3,87%	Poland	2,82	1,46%
Brazil	5,27	2,16%	Germany	1,65	0,85%
Chile	3,16	1,30%	France	1,24	0,64%
Korea	2,93	1,20%	Bulgaria	0,50	0,26%
Mexico	2,86	1,17%	Others	6,11	3,21%
Others	22,81	9,36%			
TOTAL CERs and ERUs	435,73	100%			

(Source: European Commission, 2017(a))

Thus the market for international credits have shown both to create widespread concerns regarding their perceived environmental benefits and a tendency towards monopolisation. Furthermore, it is remarkable how these changes both here and in the subsequent directives are not accompanied by any change in discourse regarding the perceived benefits of such a market-based strategy. However all of these perceived shortcomings would provide the context for subsequent reforms aiming at controlling the price level as, at least implicitly, the carbon market was unable to do this through its market flexibility. In the 2012 *carbon market report* it was suggested several ways to deal with the saturation of quotas (Commission, 2012(a)). These included so-called “discretionary price management mechanisms”, that is, regulations aimed at impacting the price levels of EUAs (Commission, 2012(a):9-10). Because the perceived issue was that there was an excess of quotas, high supply and low demand, the idea was to install a mechanism that would ensure a *de facto* price floor. Later these would be legally defined as backloading, meaning the temporary suspension or withdrawal of quotas, and the introduction of a permanent system that could withdraw quotas which later became known as the Market Stability Reserve (MSR). The development in EUA price levels during the second phase of trading thus served as justification for these proposals, the price development is illustrated below:

Graph 4.1 - EUA Price Development 2008-12



Source: (European Commission, 2012(a))

These kinds of proposals related to price-mechanisms was described by former Commissioner for Climate Action and danish liberal-conservative politician, Connie Hedegaard, as a “no brainer” (Reuters 2012 in Wettestad and Jevnaker, 2016:44). This was

in some opposition to the European Commission's conclusion in the first *Carbon Market Report* which stated that "*Discretionary price-based mechanisms, such as a carbon price floor and a reserve, with an explicit carbon price objective, would alter the very nature of the current EU ETS being a quantity-based market instrument*" (European Commission, 2012(a):10). It is relevant to note how a market intervention aimed at securing a practical price floor, i.e aiming to ensure that the economic incentive to reduce emissions is still present for the market actors, is seen as altering the "nature" of the policy in question. This could be a strategic expression of "pro-market" discourse, strategically utilising the shared perception that markets allocate resources efficiently when left to themselves.

This is seconded by our informant from the European Commission, who perceived this particular rhetoric as prominent among member states against EU ETS reforms based on price-mechanisms (Appendix, C). Furthermore, according to the same informant these excessive amounts of allowances was estimated to continue 10-15 years into the future and thus potentially undermine any potential increase in prices and hence incentives to increase efficiency and renewable energy share (Appendix, C). From the perspective of ES, where markets are seen as deliberate constructs with certain rules and norms, it seems almost oxymoronic to argue that a trading system which purposely tries to control the *quantity* of allowances through a cap should be violating any norms because of a price floor as this would seem to be a very similar mechanism. Also the free allocation aspects, which makes up almost half of all allocation during phase 3, seems by comparison a much larger deviation as these replace market-based allocation entirely and was supported by the same actors as those who were against price-based regulatory mechanisms (Wettestad & Jevnaker, 2016). This once again indicates that the use of this discourse is somewhat strategic, albeit appealing to shared beliefs regarding the virtue of market-based mechanisms.

Nevertheless, member states such as Poland, were against any intrusion into this seemingly malfunctioning market, arguing that the market was finding its equilibrium, a similar discourse to the one mentioned above (Wettestad & Jevnaker, 2016). A temporary stalemate was caused mainly by the indecisiveness of some "fence sitters", most notably Germany, and the continued opposition of most CEECs except Slovenia (ibid.). In the parliament internal disagreement in the two largest groups, EPP and S&D, helped block proposals which included elements of backloading (Wettestad & Jevnaker, 2016). However changes in parliamentary composition and member state positions made it possible to strike compromises that included temporary backloading and the permanent MSR mechanism which constitutes some sort of permanent backloading function (ibid.).

Also it has been argued that industrial lobbying played a large role with the lobby group “Friends of the ETS”, promoting EU ETS reform, managing to form the most dominant industry group, thereby influence policy-makers that are attentive to industry concerns lean towards EU ETS reform instead of a non-decision (Fitch-Roy et al., 2019). Some explanations include a split in the CEEC group, a slight left turn by the German government due to changes in government composition and a tendency for the large centrist groups to cooperate as a reaction to the increase in voter support for groups to the left and right of the political center, especially the far-right (Wettestad & Jevnaker, 2016).

This led in the first instance to the temporary “back-loading” of 900 million EUAs set for auctioning over the period (European Commission, 2015(a); European Union, 2013(a)). This “temporary” measure would later become less so, as the 900 million allowances was later placed in the Market Stability Reserve (MSR) and will therefore only be auctioned again if the EU ETS finds itself in the opposite situation, namely a shortage of allowances in circulation (European Union, 2015:2). In 2014 it was concluded in the European Council adoption of the 2030 climate and energy policy framework that “(...)a well functioning, reformed EU ETS with an instrument to stabilise the market will be the main European instrument to achieve the Union’s greenhouse gas emissions reduction target” (European Union, 2015:1). This was later to be the previously mentioned Market Stability Reserve (MSR), which was adopted in 2015. Therein it was also perceived that the “(...)structural supply-demand imbalances(...)” also identified by the European Commission in the 2012 report was “(...)expected to continue(...)” and that “The market would have to continue to operate for more than a decade with a surplus of around 2 billion allowances or more, thereby preventing the EU ETS from delivering the necessary investment signal to reduce CO2 emissions in a cost-efficient manner and from being a driver of low-carbon innovation(...)” (European Union, 2015:1-2). Thus there was a majority which perceived the EU ETS to be severely compromised in the absence of market intervention, and the adoption of the 2015 Market Stability Reserve signalled the permanent introduction of price controls as per the 1st of January (European Union, 2015). It is foreseen to deduct 12% annually from the auctioned volume of allowances, with a look to continue deduction of allowances until it reaches a measured excess of 833 million allowances (European Commission, 2015(a)). Conversely it will add allowances to the circulation if the excess drops to below 400 million (European Union, 2015) Furthermore the directive continues its support for the overall direction of the EU ETS and the market conditions which is perceived to necessarily function under:

“It is important that the EU ETS incentivise carbon-efficient growth and that the competitiveness of the Union’s industries at genuine risk of carbon leakage be protected” (European Union, 2015).

This is also expressed in the conclusions of the European Council (2014) which, too, state the need to continue free provisions to the energy intensive industries that are currently protected under the *carbon leakage* provisions, in addition to the so-called low-income countries covered under the previously mentioned article 10c.

Also in the report stipulated by the directive, it is noted *“That [the] report should consider relevant effects on competitiveness, in particular in the industrial sector, including in relation to GDP, employment and investment indicators”* (European Union, 2015).

Once again, there seems to be a stability in the discourse around the EU-ETS as a cost-effective way to mitigate climate change and an expressed wish to not compromise competitiveness in the industrial sector, thus “disciplining” the extent of climate regulation. This discourse is further underlined by the actions and justification set out in Regulation 421/2014 (European Union) which gives temporary derogation to the aviation activity emanating to and from third countries. The justification put forth here, is that there is a perceived need *“(….)to take account of developments at, and positions taken in, international fora(…)”* (European Union, 2014(a):1). A similar view is later expressed regarding global maritime emissions discussed under the International Maritime Organisation (IMO) with work in this area by the EU to only begin in 2023 (European Union, 2018(a):4). Once again, using external factors to justify a less extensive EU ETS, as an expression of the simultaneous promotion and disciplining effect of global markets. Putting the discourse in a wider context, it has also been argued that these actions were to promote EU climate ambitions at the Paris summit, as mentioned earlier (Birchfield, 2015). However it is hard to imagine that the development in aviation regulation would appear to external actors as having any significant cost, as developments in the internal aviation cap (separate from the general cap) has evolved seemingly independent of the verified emissions from the aviation sector. This is illustrated in the table on the following page.

Table 4.4 - Aviation Emissions and Allowances

Year	2013	2014	2015	2016	2017
Verified emissions (in million tonnes CO ₂ equivalents)	53 495 902	54 822 754	57 085 143	61 124 583	
Change of verified emissions to year x-1		1 326 852	2 262 389	4 039 440	
Free allocation (EU28+EEA EFTA states)	32 455 312	32 403 025	32 152 526	32 036 975	32 018 239
Free allocation from special reserve for new entrants and fast growing operators	0	0	0	0	1 085 080
Volumes of allowances auctioned	0	9 278 000	16 390 500	5 997 500	4 730 500 ⁴⁹

(Source: European Commission 2017(b))

As can be read in the above table, verified emissions from the aviation sector has been increasing regardless of the development in the overall cap. This cannot be because of internal trading lower-emitting sectors, as the aviation sector has a separate cap (European Commission, 2017(b)). Furthermore the development in this sector was also described by our informant from the European Commission as unsuccessful (Appendix, D1). He also described the general effect the cap, as it has been in practice, on the level of verified emissions as inconclusive based on his knowledge of the studies conducted on the topic (ibid.). While the published numbers on verified emissions display an *overall* decreasing trend, this trend is almost exclusively due to developments in the power sector, a sector often the subject of large public investments and commonly identified as the most cost-effective way to reduce emissions and hence has been the central sector of interest in many national reduction targets (European Commission, 2013(a)). The data is illustrated in the table on the following page.

Table 4.5 - EU ETS Emissions from 2011-2017

Year	2011	2012	2013	2014	2015	2016	2017
Verified total emissions	1904	1867	1908	1814	1803	1751	1754
Change to year x-1	-1.8%	-2%	2.2%	-4.9%	-0.6%	-2.9%	0.2%
Verified emissions from power sector	1.155	1.153	1.101	1.011	1.005	957	949
Change to year x-1		-0,2%	-4,5%	-8,1%	-0,6%	-4,8%	-0,8%
Verified emissions from industrial installations	749	714	807	803	798	794	805
Change to year x-1		-4,7%	13,1%	-0,6%	-0,6%	-0,5%	1,4%
Real GDP⁴⁸ growth rate EU28	1.7%	-0.5%	0.2%	1.7%	2.2%	1.9%	2.4%

(Source: European Commission, 2018(a))

Important to note is that the cap decreases annually in a linear fashion, LRF referred to earlier. One could argue that one of the central rationales of an emissions trading system, is to move the cost from sectors which have a high cost of reducing emissions to sectors which have lower costs. This argument could be further compounded by the fact that the power sector has been analysed to be the most cost-effective sector when it comes to climate mitigation. Therefore it could be concluded that the power sector has simply been selling its allowances and reduced its emissions, and by extension reduced the emissions of the covered sectors. However the year of 2017 would seem to counter this argument, as there was a slight increase in verified emissions notably concurrent with a large spike in the volume of auctioned allowances as shown below, with only a slight decrease in free allowances (European Commission, 2018(a)).

Also the data covered earlier on the aviation cap, which seems to have negligible effect on emissions, would seem to suggest otherwise, although those two caps are separated in practice. One similarity is that both sectors are still characterised by a high amount of freely allocated allowances, which would weaken the potential cost of emission for the sector as a whole and by extension weaken the monetary incentive to reduce emissions.

Regardless of the exact relationship between the cap and verified emissions at this current stage, it was emphasised by our informant from the European Commission that the EU ETS

is internally seen as a complementary programme, even in the sectors covered by the EU ETS (Appendix, C). While this would seem contrary to regular statements such as: *“The EU Emissions Trading System (EU ETS) has been the cornerstone of the EU’s strategy for reducing greenhouse gas (GHG) emissions from industry and power sector since 2005”* (European Commission, 2017(a):5). This may be an indicator that this kind of discourse is strategic, however even if strategic, it most likely speaks to deeply held beliefs regarding the virtues of market mechanisms. Beliefs that would continue to be expressed in the next amendment of the EU ETS. Furthermore this period shows an entrenchment of the protection of industrial interests in the form of continued derogation from auctioning given to the industrial sectors under the carbon leakage clause and also expressed in the long-term transition to full auctioning for the industrial and heating sectors in general, as opposed to the full auctioning being given to the power sector. From an ES perspective, this is arguably an expression of the “capitalist-state coalition” whereby public authorities regulate markets based on the perceived competitive position of its firms (Fligstein, 2001:46-47). This general direction of the EU ETS would continue in the 2018 amendment.

4.4 Looking into the future - The EU ETS is Amended for the all important decade

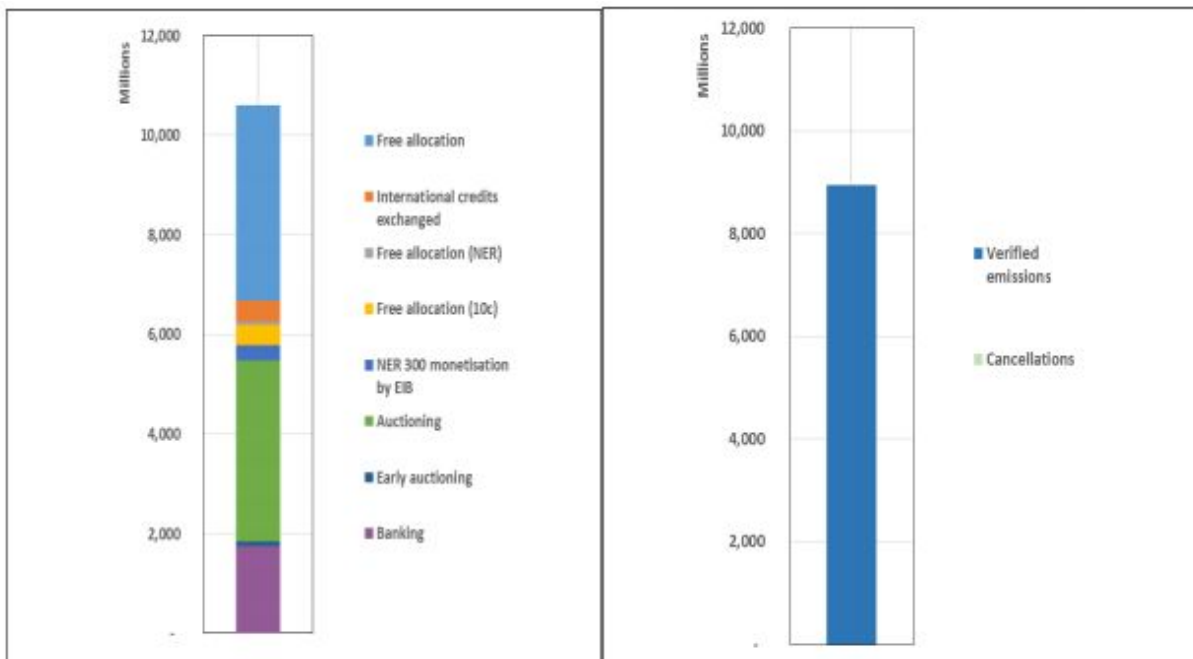
On the 14th of March, the EU ETS was amended for a third time, with Directive 2018/410. Unsurprisingly, the EU ETS is expressed as being “(...)a key means for the Union to reach its agreed target for 2030 and the commitments under the Paris Agreement” (European Union, 2018(a):8). Due to the timing with international agreements under the Conference of the Parties (COP) the 4th, and so far last, phase of the EU ETS is based on the 40 percent reduction goals (as compared to 1990 levels) by 2030 as agreed at the European Council in 2014 (European Union, 2018(a)). During the time of writing, this remains the EU’s legally binding contribution by 2030 to secure a maximum 2°C global warming with a supposed aim to limit it to 1,5°C under the much discussed Paris Agreement agreed to by the COP in 2015. In order to make the EU ETS able to contribute to this, it was seen as necessary to increase the LRF to 2,2%, thus increasing the rate at which the cap is decreased annually (European Union, 2018(a)). The carbon leakage clause is kept in the agreement, again with the justification that “(...)no comparable efforts are taken in other major economies(...)” expressing that, “Avoiding carbon leakage justifies temporarily postponing full auctioning” (European Union, 2018(a):4). Specifically this is mentioned as a justification for derogating the treaty enshrined principle of “polluter pays” which would stipulate that pollution should be regulated at its source (ibid.) It is further argued that, “Experience gathered during the operation of the EU ETS has confirmed that sectors and subsectors are at risk of carbon leakage to varying degrees, and that free allocation has prevented carbon leakage” (European Union, 2018(a):5). This is striking to note when juxtaposed to our informant from the European Commission who downplayed such a concern when held up against the empirical record (Appendix, C). Also the support for lesser state-aid restrictions for these sectors perceived to be exposed to the threat of carbon leakage is continued: “It would be desirable that Member States partially compensate, in accordance with state-aid rules, certain installations in sectors or subsectors which have been determined to be exposed to a significant risk of carbon leakage(...)” European Union, 2018(a):6). Thus the narrative surrounding the necessary protective measures resulting in less ambitious climate mitigation due to perceived constraining structures on an international level remains.

The amount that auctioning played during phase 3, on average 57%, is seen to “in principle(...)remain 57%” (European Union, 2018(a):4). This means that the stability needed in the price of EUAs rests on the unproved strengths of the MSR and not on any additional auction-based allocation of the EU ETS thus keeping the method of allocation very similar to

the previous phase. There is also a perceived need, perhaps in light of the continuation of the qualitative nature of the current allocation scheme, for the MSR to be, “(...)amended so as to increase, until 31 December 2023, the percentage rates for determining the number of allowances to be placed in each year in the reserve” (European Union, 2018(a):8).

The current composition of the allocation of allowances, the so-called supply side, is shown in the figure below as well as an illustration of the demand side:

Figure 4.1 - Components of EUA Supply



(Source: European Commission, 2018A)

As can be read, the composition of the supply of allowances is still a fairly heterogeneous affair, with auctioning and free allocation being the main components with “Banking”, the transferring of allowance from one phase to another, also playing a significant role.

Regarding the free allocation allowed under Article 10c, for lower income (in an EU context) countries with the professed aim of modernising the power supply, there is continued support to “(...)give free allocation to the energy sector(...)until 2030(...)” (European Union, 2018(a):8). However, our informant from the European Commission stated that Poland would surrender this right, which would make this derogation from auctioning negligible as Poland holds the lion’s share of these allowances (Appendix, C). This was later confirmed in June when the relevant Polish minister notified the European Commission that these free allowances would be auctioned, rather than distributed to individual companies thus instead adding a substantial amount of financial equity to Poland’s green investments (DG CLIMA,

2019). International credits play a lesser role and is not envisioned to be a part of the forthcoming phase, possibly due to the reasons identified earlier although is not clear based on the documents analysed here (European Union, 2018(a)). Furthermore the derogation for smaller installations from participating in scheme despite being in the targeted sectors also continue (European Union, 2018(a)).

The “rules of exchange” in the EU ETS market, while harmonised under EU law, are still of a varied kind while based mainly on free and auctioned allocation. The relative increased stability, would from an ES perspective seem to increase certainty and stability in the market and hence cause an increase in price. While the MSR has only been in practice since the start of 2019, the current available data does seem to suggest a sustained increase in prices - a trend starting in 2018. Whether or not this is reflective of the impact of MSR or other factors, such as market actors hoarding allowances before the next period, is something which remains to be seen and which will undoubtedly be part of future research.

There are no significant discursive changes in the, so far, last amendment to the EU ETS, cementing the stability in discourse and identified in the last two subsections and the chapter in general. The table below summarises this development and it will be seen in future price developments whether it is just a trend, or whether the market, and hence the policy, has actually stabilised.

Graph 4.2 - EUA Price Development 2009-19



Source: Data taken from the NGO Sandbag on the 24/07/2019

Link: <https://sandbag.org.uk/carbon-price-viewer/>

Sub-Conclusion:

From the perspective of the methodology employed in this thesis, the EU ETS can be characterised by a simultaneous stability in discourse and an instability in rules of exchange and governance structures regarding market regulation of the EU ETS. While the latter factors contribute to an overall instability and was the material source of the legislative controversy during the “middle” period of the policies hitherto lifespan, stability in discourse has conversely contributed to its survival as a policy. The continued belief in market-based climate mitigation as a cost-efficient policy within the confines of the perceived pressures of global markets, has served as the discursive justification for continuous reform of the EU ETS. This may be termed the “climate commons sense” identified to be hegemonic in this case. While these reforms were opposed by social forces opposed to increased climate mitigation measures in general, mainly identified as being CEEC member states and certain parts of industry, there was no “threatening” attempt identified which sought to *deconstruct* the current market-based political project, as signified by the EU ETS.

Thus a majority of member states, the centrist alliance in the European Parliament and the European Commission seem to be continuously promoting this market-based mechanism based on the policy documents and secondary sources considered throughout the policy’s identified “lifespan”. At least based on the work of other authors which have covered the topic (e.g. Fitch-Roy, 2019; Wettestad & Jevnaker, 2016; Müller and Slominski, 2013). However, as mentioned in the literature review, there are several problems with these approaches and evidence regarding actor-coalitions should be further corroborated, although we have attempted some corroboration here. Somewhat neglecting actor coalition, arguably because of the “discourse heavy” implied by our choice of method, is one weakness of this analysis which could be overcome by supplementing it with other methods such as field studies or interviews. While interviews have been conducted for this thesis, with the informant from DG CLIMA being especially helpful for analytical purposes, it has not been utilised in the scope as originally envisioned, as described in the methodology section. This problem will be further discussed in chapter 6 and in the analysis chapter on biomass as a renewable energy source, which follows this chapter.

5. Analysis Part Two - Biomass as a Renewable Energy Source

This chapter contains the second part of the analysis on the promotion of biomass as a renewable energy source. The chapter is divided into three sections for the sake of analytical clarity. The first period covers the early period of biomass promotion beginning at the UN level in the early 1990's and initial strategies at the EU level. The second period covers reformulations of renewable energy policies and biomass strategies which addresses, although to a limited extent, the many scientific concerns regarding sustainability risks related to the promotion of biomass as a renewable energy source. The last period covers the most recent pieces of legislation which envisions yet another round of biomass expansion for the all important decade of 2020-2030. We argue that, similar to the EU ETS case, that there is a concurrent market instability and simultaneous stability in discourse. Factors related to market instability are illustrated by the lack of harmonised and enforceable sustainability criteria which is identified to cause consistent uncertainty and criticism from epistemic communities. However, this is correlated to a simultaneous stability in discourse regarding the perceived sustainability, cost-effectiveness and market availability of biomass. We argue that the stability in discourse, within the methodological framework advanced here, can be seen as the defining factor contributing to the continuous advancement of biomass as a renewable.

5.1 Biomass is Qualified as a Renewable at the Global Level and Early Policies on Renewables and Biomass in the European Union are Developed

The United Nations Conference on Environment and Development (UNCED) which took place in Rio de Janeiro in 1992, referred to as the Rio summit, is generally acknowledged as the first time biomass was promoted as a renewable energy, based on the perception that Greenhouse Gas Emissions (GHGs) emitted during biomass combustion would later be compensated for by plant growth (Sánchez & Croal, 2012). Therefore, it is perceived as a landmark in, environmental impact assessment, later lead internationally accepted accounting principles regarding Land Use, Land-Use Change and Forestry (LULUCF) (Sánchez & Croal, 2012). An essential part of the Kyoto Protocol was thus the different parties obligation to, which includes the European Union, provide information and estimates of the measured changes in carbon stocks and anthropogenic GHGs by sources and removals by sinks from LULUCF activities under the Kyoto Protocol in accordance to meet

the commitments referred to in Article 3 (United Nations, 1998:3). Defining changes in land-use this way, essentially means that biomass is conceptualised not only as a potential energy source but as “sinks” thus adding value to leaving it on the ground (United Nations, 1998:3).

The first Kyoto related climate change policy documents within the EU identified in this paper are the Green Paper and White Paper of 1996 and 1997 on the future of renewable energy in the Union. The intention here is expressed as taking the first EU-level steps towards transitioning into an energy system based on renewables (European Commission, 1996; European Commission, 1997(a)). In the Green Paper, renewable energy is addressed within the framework of the internal market: *“It [renewables] forms of integral part of the Community’s efforts of creating a stronger and more competitive industrial base to face up to the globalisation of markets and fiercer international competition”* (European Commission, 1996:33). It is further argued that biomass is not used to its full potential: *“(…)the internal market is not yet fully operational, it is difficult to anticipate the effect that the internal market will have on the exploitation of renewables”* (European Commission, 1996:34). Furthermore, it is argued that *“In order to make renewables more competitive, priority should be given to ways which let the market forces function to bring down the costs for producing renewable energy as rapidly and as far as possible”* (European Commission, 1997(b):19).

From the policy’s beginning biomass was imagined to be market based, function on the premises of the single market, with the expressed aim of advancing european competitiveness vis-a-vis international competition. This is a very similar discourse to the one identified in the chapter on the EU ETS and thus expresses the same type of “climate common sense”. In order to fulfil climate mitigation pledges related to the first round of Kyoto commitments biomass was seen as something which should be promoted, as it was seen as underutilised, making up around 3% of total energy consumption within the EU (European Commission, 1997(b)). It is specifically argued that, *“Energy from biomass is versatile in that it can produce electricity, heat, or transport fuel as appropriate, and unlike electricity it can be stored - simply and usually economically. In addition, production units can range from small scale up to multi-megawatt size”* (European Commission, 1997(b):37). Here the cost-effectiveness and flexibility of biomass is emphasised, something which was also seen by several of our informants as a key reason why it was initially seen as the key renewable energy source (Appendix, B1; Appendix, B2). While biomass is seen to potentially be, *“(…)virtually any organic material”*, used for energy purposes (European Commission, 2010:3); wooden or solid biomass is the main commodity related to the energy produced

from biomass, estimated a decade later to account for 80% of the total share of biomass (European Commission, 2007(a)). Here a specific energy conversion method, combined heat and power (CHP), is seen as central for the purposes of energy efficiency (European Commission, 1997(b)). Energy efficiency, while of course always an important factor in energy policy, is here extra important because of its impact on land-use.

I.e, if a substantial amount of energy is lost during the production process, then an additional amount of e.g. wood would have to be cut or collected from the forest floor, leading to additional pressure on the total forest mass and biodiversity (FERN, 2018).

With reference to these policy papers and In order to promote an increase in the use of renewables and to live up to the Kyoto Commitments, Directive 2001/77/EC *on the promotion of electricity produced from renewable energy sources in the internal electricity market* was adopted in 2001 (European Union, 2001). The Directive continues the market-based discourse of the policy documents preceding it by, among other things, stating that, *“It is important to utilise the strength of the market forces and the internal market”* building on the discursive foundation of generally promoting the internal market around this time (European Union, 2001:34). Furthermore it is emphasised that national support schemes for the expansion of renewable energy should be compatible with the, *“(…)principles of the internal electricity market”, and should be “...as efficient as possible, particularly in terms of cost” while, “(...)maintain[ing] investor confidence”* (European Union, 2001:36). Thus the “climate common sense” identified in the preceding paragraphs, is stable in the central piece of EU legislation promoting the expansion of EU renewables and by extension biomass generally defined in the document as, *“(…)the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste”*(European Union, 2003(b)). No harmonised criteria regarding biomass sustainability requirements are put forward, probably reflecting a consensus among the legislative majority that the sustainability risks regarding biomass are low - as emphasised by our biomass expert informant this seem to have been the general attitude around this time (Appendix, A2). This is further compounded by the fact that emissions from burning biomass was, and continues to be, accounted for as not releasing any GHG emissions into the atmosphere under the EU ETS regulation (European Union, 2003(a)). Biomass was, through its conversion into biofuels, also seen as a key source for the green transition in the

transport sector, through the adoption of Directive 2003/30/EC *on the promotion of biofuels and other renewable fuels for transport* (European Union, 2003(b)). The emission from transport-related fossil fuels is seen as a main climate concern and achieving an increased share of biofuels was also part of the first round of Kyoto commitments (European Union, 2003(b)). In this context, biofuels is phrased as a cost-effective alternative to fossil fuels and that *“most vehicles currently in circulation in the European Union are capable of using a low blend without any problem”* (European Union, 2003(b):42). It is also argued that the promotion of biofuels could create opportunities for, *“(...)rural development in a more market-orientated common agricultural policy(...)”* and thus market and energy security concerns are still present in EU policy around this time (European Union, 2003(b):43).

The point regarding the cost-effectiveness is echoed in the Biomass Action Plan, provided by the European Commission in 2005, the European Parliament is referred to for having noted that, *“(...)biomass has many advantages over conventional energy sources (...)in particular, relatively low costs(...)”* (European Commission, 2005:5). The Biomass Action Plan is formulated within the context of an anticipated review of the EU’s overall energy where “essential elements” are formulated as, *“(...)within the context of stronger economic growth(...)”* (European Commission, 2005:4). The action plan seeks, *“(...)to increase the development of biomass energy from wood, wastes and agricultural crops by creating market-based incentives(...)”* (European Commission, 2005:5).

Thus the discursive emphasis on the cost-effectiveness and market-based approach is still present at this point. Furthermore the expansion of biomass is projected to bring about, *“a reduction in greenhouse gas emissions of 209 million tonnes CO₂eq [equivalent] a year”* (European Commission, 2005:6); and a number of social and economic benefits, *“these benefits can be expected to be obtained without additional pollution or other forms of environmental damage”* (European Commission, 2005:6). Perhaps because biomass is seen in the document as having no adverse effects, no sustainability standards are suggested. However general standards to, *“(...)facilitate trade, develop markets and increase consumer confidence”*, are mentioned to be a work in progress, but these are related to enhance the market-based aspects of the policy (European Commission, 2005:14). Again, the discourse on biomass as a fully sustainable renewable energy source seems to be stable here as well. Conclusively, in this early period we observe a general stability in the discourse referred to as “climate common sense” earlier, while simultaneously a stability regarding the discourse on biomass as a sustainable source of renewable energy is also observed. Around this time there was some opposition to the general direction of the EU’s biomass policy from several

member states, who saw the expansion of biomass as a threat to certain industries which use biomass for other purposes than strictly energy (EURACTIV, 2007). The energy ministers insisted on leaving the member states free, preserving flexibility in their ability to determine own policies, objectives and approach on biomass and biofuels, while choosing which sectors in which energy crops and biomass is applied (EURACTIV, 2006). In turn this was underlined in the Council of European Union's Council Conclusions on Biomass 8-9 of June, 2006 (European Council, 2006).

Thus, any controversy in the council at the time does not seem to be related to the perceived sustainability or expansion of biomass, but is more related to the question of where to prioritise the biomass available. Conversely, the need for a moratorium was demanded by more than 30 interest groups, on the EU's transition to sourcing biofuels from large scale monocultures (EURACTIV, 2007(b)). The 26th to 27th of June 2007, they presented their case of concern to the European Parliament warning them that, *"(...)producing biofuel for EU markets will accelerate climate change, destroy biodiversity, and uproot local communities"* (EURACTIV, 2007(b):1) Almuth Ernsting from Biofuelwatch, an NGO representing the 30 signatories, said, *"Far from reducing greenhouse-gas emissions, Europe's biofuel policy threatens to accelerate global warming by destroying tropical and sub-tropical forests and peatlands, which are amongst the world's most important carbon sinks"* (EURACTIV, 2007(b):1). Nina Holland from Corporate Europe Observatory, claimed the European Commission's plan to contain, *"(...)no proposals at all which would guarantee sustainability"* and in the absence of such a guarantee then, *"we need a moratorium on biofuel support, incentives and imports"* (EURACTIV, 2007(b):1). To summarise, a stable discourse in the "climate common sense" is identified within the legislative, but already here some concerns regarding biofuels are expressed by NGOs in the absence of sustainability standards..

5.2 Biomass is Continuously Promoted Despite Identified Sustainability Risks

In order to reach the agreed 2020 goals of a 20% reduction of GHG emissions compared to 1990 levels, the European Union's 2009 Directive promoting the use of energy from renewable sources was published (European Union, 2009(b)). Here a clear "green growth" discourse is established: *"The opportunities for establishing economic growth through innovation and a sustainable competitive energy policy have been recognised"* (European Union, 2009(b):16). This statement emphasises the economic rationale behind linking climate mitigation and growth together, hence the term "green growth". While the directive still sees, *"(...)integrating renewable energy sources into the internal market in electricity,(...)"*

as important and thus frames the single market as the overarching policy tool through which renewables should be promoted through and, “(...)encourage true competition(...)”, there are several exceptions to this general trend (European Union, 2009(b):22). The directive, at least rhetorically, supports the localisation of energy production through decentralisation and states support for, “(...)transport planning, support for public transport(...)” (European Union, 2009(b):19). However, this is not a part of the legally binding part of the directive and thus is merely a signalling of values or perhaps to satisfy green and social-democratic members of the legislative majority. This can be argued to be similar to the tendencies identified through a neo-gramscian framework by Apeldoorn (2009) where it is mentioned that the general neoliberal hegemony in the EU subsumes the concerns of other political groups and often pays merely rhetorical respect to them. One exception could be the inclusion of biodiversity conservation into the sustainability standards of biofuels and bioliquids, as mentioned below. Regarding biomass, the directive seeks to continue its expansion:

“In order to exploit the full potential of biomass, the Community and the Member States should promote greater mobilisation of existing timber reserves and the development of new forestry systems” (European Union, 2009(b):19).

Thus biomass is still seen as an underutilised resource and it is further postulated that it is, “(...)essential to mobilise new biomass resources” (European Union, 2009(b):18).

While an evaluation of the sustainability of EU biomass production and consumption is envisioned, this directive does not contain one and the expansion of biomass was thus once again promoted without seriously taking into account the sustainability risks associated with it. One exception to this is the sustainability standards laid down regarding the use of fuels made from biomass, biofuels and bioliquids, mainly used in the transport sector (European Union, 2009(b)).

Arguably, the sustainability of biomass-related products are now perceived as needing harmonisation and standardisation to a certain extent. Furthermore, the biofuel criteria take into account important sustainability factors not directly related to GHG emissions such as food security and conservation of biodiversity (European Union, 2009(b)).

To summarise, extensive sustainability criterias regarding biofuels are developed, while similar criteria are merely envisioned to be subject for review for (solid) biomass used in electricity, heating and cooling, including the market-dominant type of wooden biomass mentioned earlier. There seems to be no scientific reason presented for why this is the case and as we shall show in the next few paragraphs, the European Commission suggests that

the sustainability criteria which member states use should be modelled on the standards created here for biofuel and bioliquids. Furthermore, the lack of common standards, as mentioned later, creates a plethora of self-made sustainability standards from industry itself, which does not help much in reducing the uncertainty regarding the sustainability of biomass, as would have been predicted by Economic Sociology (ES).

In 2010 the European Commission published its follow-up report addressed to the Council and the European Parliament on the Renewable Energy Directive titled: *on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling* (European Commission, 2010). It is pointed out in the beginning of the report that bio-energy accounts for nearly 5 percent of the final energy consumption in Europe (European Commission, 2010). According to the projections made in 2007 for the Renewable Energy Road Map the expectation is that biomass will double, contributing to almost half of the entire contribution for reaching the 20 percent renewable energy objective in 2020 (Ibid.). Thus a great expansion of biomass is still envisioned for the Kyoto Protocol Extension and biomass is still seen as being by far the most utilised “renewable”. The report specifically addresses the rising demand for a common sustainability scheme for biomass from environmental organisations, utilities and biomass importing countries (European Commission, 2010). The rising demand is based on concerns that an unsustainable production of biomass is seen as the result of an increase in imports from third countries, since some third countries are perceived to lack a legal framework such as the one established within EU at that given point in time (Ibid.). While, as mentioned earlier, there are no harmonised sustainability standards regarding biomass for electricity, heating and cooling, the European Commission instead refers to laws related to the CAP, protected areas and member state forest policy (European Commission, 2010). It is further mentioned that North American and European forests are increasing while deforestation and forest degradation continues at a global scale. The root cause of forest degradation and deforestation is seen to be the lack of sustainable forest management and weak governance structures (Ibid.).

Also, agreements regarding forest management with third countries are often seen to be weak and unenforceable (European Commission, 2010).

There seems to be an implicit notion here that the sustainability risks related to biomass does not concern the EU and its main biomass trading partners in North America, as the governance structures here are implicitly seen as strong. Thus adding to the discourse strongly present in this document that the general sustainability risks regarding domestic

biomass production is low. To summarise, the unsustainable aspects here seen as stemming from third countries has been magnified due to the expansion of biomass, which the EU promoted, and this is causing general concerns about the commodity's perceived sustainability. From an ES perspective this can be interpreted as a case of market instability due to the lack of standard-setting by public bodies as the private actors involved are unable to do this themselves. One consequence of this uncertainty is that importing countries have developed national sustainability requirements for bio-energy, which has led to certification schemes, in the agriculture-, forestry- and energy sectors which are not necessarily complementary or compatible (EU Commission, 2010). The conclusion from an ES perspective is that market actors are seeking stability in an overwhelmingly complex world. However, we would also expect the attempt of several actors to create standards as disrupting the general market through the lack of enforceable universal standards.

Yet, the problem is not perceived to be exclusively related to third countries, as the expansion of biomass in general is seen to endanger the ability of forests to store carbon:

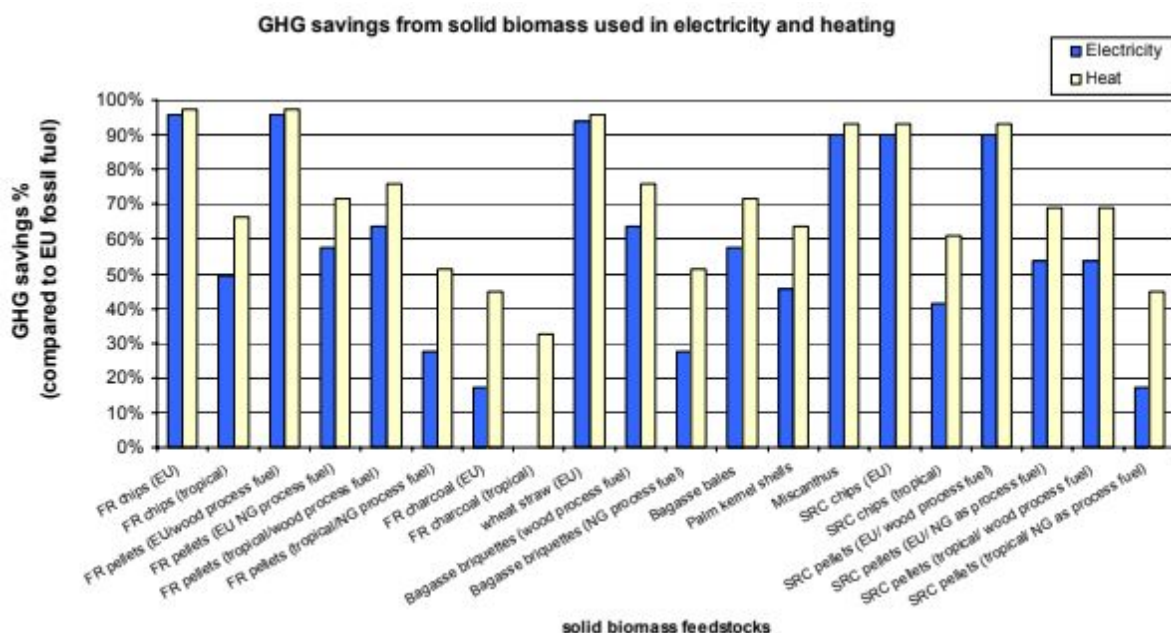
“In the EU, as most biomass comes from European forest residue and by-products of other industries (processing residues), and as forest management governance structures are strong, the current sustainability risks are considered to be low. However, the expected increase of demand for domestic and non-EU biomass feedstock warrants vigilance in how far and in what way the expected expansion will impact on carbon stocks in forests and agricultural land and soils” (European Commission, 2010:5).

This seems contradictory to the previous assessment that the current sustainability risks in EU are considered low, as the predictive increase in demand for domestic and non-EU biomass feedstocks is here seen to constitute an increasing threat to sustainability in general. As envisioned in the 2009 directive on renewables covered earlier, the report further offers an impact assessment considering the need for standardised measurements of sustainability in biomass production (European Commission, 2010).

Considering the supposed commitment to the Kyoto Protocol's LULUCF accounting the Commission state in their 2010 report that by addressing these emissions through a general framework accounting for all concerned emissions within this sector, can contribute with beneficial effects, such as *“(…)reward increasing carbon stocks, which is important to secure sufficient biomass resources over time. Proper global LULUCF accounting can make an*

important contribution in the context of the sustainable production of biomass” (European Commission, 2010:5). However it is assessed that since such rules are not yet established at international level progress in the field would be monitored in order to reassess the situation in December 2011 (European Commission, 2010). It is stated that it is considered to suggest a procedure to target potential sustainability issues. This may be the case when, “(...)LULUCF and REDD issues are insufficiently addressed at international level, or if countries are not engaging sufficiently to implement such rules(...)” (European Commission, 2010:9). The discourse on the perceived sustainability of biomass becomes even more contradictory when taking into account the statement: “The wide variety of biomass feedstocks make it difficult to put forward a harmonised scheme at this stage” (European Commission, 2010:8). There seems to be no good reason why a harmonised scheme would be easier on a global scale, and the temporal element hinted at is difficult to grasp as well, as there seems to be no forecast that the general market for bio-energy will become more homogeneous over time. Last but not least the document goes on at great length about the usefulness of a Life Cycle Assessment methodology in correctly assessing the sustainability, or lack thereof, of a given biomass commodity. It is argued that such a methodology is necessary in order to account for GHG emissions (European Commission, 2010). One reason why such accounting is seen as desirable, is that the average GHG savings varies a lot based on the different biomass commodities, as illustrated by the data presented by the European Commission itself, as illustrated below:

Graph 5.1 - GHG savings from solid biomass applied in electricity and heating



Source: (European Commission, 2010)

In the most counterproductive cases, biomass provides either little or no more GHG saving than fossil fuels. Taking into account these facts, which are available to policy makers, there seems to be a clear contradiction between what the EU says and what the EU does.

Adding context to all of these contradictions, they are probably explained by fractions between actor coalitions with several member states such as the UK and the Netherlands reportedly in dismay over the lack of enforceable EU-wide standards (EURACTIV, 2010). Furthermore a split between DG Environment and DG Energy and Transport (before the split) was reported, concluding that the latter won out regarding the reports final conclusion (ibid).

Another reason could be that the EU did not, as part of its 2020 commitments under the extended Kyoto Protocol, include emissions related to LULUCF accounting and hence reaching its commitments was not dependent on it (European Union, 2018(b)).

Similarly significant international development regarding such accounting, does not seem to have happened until the 2011 UNFCCC meeting in Durban (ibid.).

Conclusively, this outcome is similar to the case regarding aviation emissions in the EU ETS chapter, where the strategy is to decrease domestic ambitions in order to wait for international developments, despite a perceived need for increased climate mitigation.

The concerns regarding the scientific evidence suggesting large variations in the sustainability of biomass, based on the specific commodity, is further highlighted in a report from the European Environment Agency's (EEA) scientific committee in 2011 (European Environmental Agency, 2011). Here it is argued that, *"(...)legislation that encourages substitution of fossil fuels by bioenergy, irrespective of the biomass source, may even result in increased carbon emissions – thereby accelerating global warming"* (European Environmental Agency, 2011:1). A similar case can be seen in 2012, where a leaked EU study determined that carbon emissions are increased by EU bioenergy policies (EURACTIV, 2012(a)). The document is a literature review conducted by the Joint Research Centre of the EU and concludes that, *"the use of roundwood [trees] from forests for bioenergy purposes would cause an actual increase in GHG [greenhouse gas] emissions compared to fossil fuels in the short term"* (Neslen, 2012(a)). Furthermore, the study states that bioenergy creates emissions rather than mitigating them due to a "carbon debt" occurring in the interim (Neslen, 2012(a)). The researchers recommend to apply proper accounting in order to target this issue and meet the EU 2020 objectives. According to an EU official then there had been "internal problems" concerning the problem of "carbon debt" being

unresolved (Ibid.). “Carbon debt” here refers to the GHGs yet to be absorbed by plant growth, initially created when combustion of biomass occurs. Brussels sources further argue that the perceived lack of transparency is deliberate in order to set policy objectives, before the necessary scientific research has been conducted (Neslen, 2012(a)). They are concerned that the entire story of the Indirect Land Use Change (ILUC) case in biofuels¹ will repeat itself in biomass. It can to some extent be difficult to assess the credibility of the statement provided by the anonymous Brussels sources and the EU source. However, corroborated with other evidence it becomes likely that scientific controversy was present around this time. Thus, there seems to be at least some scientific recognition within EU institutions, that the unregulated use of biomass which does not take into account how it is sourced is liable to be unsustainable. Conclusively, the sustainable use of biomass seems to be fundamentally dependent on the proper operationalisation of LULUCF accounting. However, the perception that biomass carries significant sustainability risks does not seem to be a general consensus within the EU at the given time. As one EU official told the pan-european media network, EURACTIV, in April 2012: *“I don’t think they have any intention of considering the carbon emissions from wood combustion. They are not convinced that it’s an important enough issue”* (EURACTIV, 2012(b):1). The official further added: *“I see a very significant risk that we will increase emissions for several decades to come”* while another official added that regarding the calculation of sustainability risks related to biomass, *“No one has looked at this in sufficient seriousness”* (EURACTIV, 2012(b):1). While it is hard to assess how representative these statements are, given the anonymous character of the officials interviewed, it seems at least probable that significant concerns about the sustainability risks of biomass were present in the EU epistemic communities at this point, especially taking into account the scientific opinion of the EEA.

¹ “Two EU laws adopted in 2009 promote the use of biofuels in the EU, ostensibly for the purpose of reducing greenhouse gas (GHG) emissions from the transport sector. However, both the Renewable Energy Directive (RED) and Fuel Quality Directive (FQD) could lead to higher, not lower greenhouse gas emissions unless the issue of Indirect Land Use Change (ILUC) is resolved. In October 2012, the European Commission published a proposal trying to address the problem. The proposal formally relieves member states from the need to further support or mandate food crop-based biofuels above today’s level of about 5%. While this is a step in the right direction, it still fails to properly account for GHG emissions from ILUC. This means that regulations still favour bad biofuels over sustainable ones in three ways; the FQD still stimulates fuel suppliers to blend high-ILUC biofuels such as conventional biodiesel in their petrol and diesel; the RED still incentivizes member states to expand the use of high-ILUC - but non-food - biofuels; cleaner, low-ILUC biofuels are still not properly incentivized, in particular in the FQD.”
(<https://www.transportenvironment.org/publications/biofuels-dealing-indirect-land-use-change-iluc>)

A public consultation carried out by the Commission in 2011 revealed that several so-called “stakeholders” were concerned about the negative sustainability impacts of biomass (European Commission, 2014(a)). A year later, 2012, it was acknowledged by the European Commission in a communication on renewable energy that there was a need to consider the sustainability of biomass, as, “*The expected rise in the use of biomass after 2020 heightens the need to use existing biomass resources more efficiently and to accelerate productivity growth in agriculture and forestry in a sustainable manner*” (European Commission, 2012(c):11). Here the emphasis is on the envisioned increase in biomass production and consumption, not on the previous lack of harmonised sustainability standards or any qualitative critique of the sustainability of biomass, e.g. regarding the temporal aspects of plant growth, as was presented earlier in this chapter. Furthermore, the communication continues the emphasis on a market-based approach arguing that, “*The creation of the single European market is at the heart of Europe's prosperity and should be the driving force of change in Europe's energy sector. In an open and competitive European market the renewable energy industry created under the current regulatory framework should be able to prosper*” (European Commission, 2012(c):12). Market-based promotion of renewables through the single market, including biomass, is not only seen as desirable but entirely sufficient for renewable to become widespread in use. It follows from this that the envisioned policy development is either related to a consolidation of single market developments, through the Energy Union, or the expansion of accessible global markets (European Commission, 2012(c)). Conclusively, there is no fundamental change in regulatory approach related to the increase in scientific concerns identified in this time period.

Despite the continuity in how to regulate biomass, It still seems that concerns regarding the perceived sustainability of biomass spread relatively fast during this period. Against this backdrop of a perceived need for regulation in the context of projected biomass expansion, new accountability rules for the LULUCF was adopted through Decision no 529/2013/EU on the 21st of May 2013 (European Union, 2013(b)). As mentioned earlier, proper LULUCF accounting is seen as the basis for regarding the combustion biomass as GHG neutral. Here the sector is, similar to the UNFCCC definition, conceptualised as, “*(...)net sink that removes from the atmosphere an amount of greenhouse gases that is equivalent to a significant share of total Union emissions of greenhouse gases.*”, the regulation of which “*(...)can substantially limit emission into and enhance removals of greenhouse gases from the atmosphere*” (European Union, 2013(b):80). It is further emphasised that, “*(...)all land*

use should be considered in a holistic manner”, but this seems to be a long term perspective as the directive allows for, “(...)Member States should initially be allowed to exclude certain carbon pools from accounting” (European Union, 2013(b):80-81). This is done with the expressed aim of encouraging investments in certain sectors, which seems hard to justify from a climate mitigation perspective. However this perspective on the LULUCF and its indirect consequence, however long term, for biomass could come to constitute an important development in the intra-EU production of biomass for electricity and heating due to the more holistic accounting provided by this conception of biomass related GHG emissions. As stated later it was, “*implicitly assumed that an almost immediate uptake via plant re-growth of the initially released biogenic carbon takes place*” (European Commission, 2014(b):16). Thus, these developments constitute somewhat of a change in how biomass is qualified, albeit it being around 20 years after LULUCF was first envisioned at the UNFCCC level.

A 2014 (European Commission, 2014 (c):) communication on renewables, further emphasised the need to ensure the sustainability of biomass: “*An improved biomass policy will also be necessary to maximise the resource efficient use of biomass in order to deliver robust and verifiable greenhouse gas savings and to allow for fair competition between the various uses of biomass resources in the construction sector, paper and pulp industries and biochemical and energy production*”. Here it is again the envisioned expansion of biomass that is seen as endangering the perceived sustainability of this relatively young commodity. From an ES perspective, the interpretation is a little different as it would here be the lack of public standards regarding sustainability that can be seen as leading to uncertainty. Thus there is no substantial challenge to the discourse that biomass is sustainable or the way biomass is promoted through the internal and global markets, as the emphasis is on the challenges emanating from increased production - an increase which is still welcomed. Furthermore, the European Commission perceived a need to review the entire “state of play” regarding the sustainability risks related to biomass, also in 2014 (European Commission, 2014(b)).

While earlier points regarding the sustainability, market availability and cost-effectiveness of biomass are repeated here, it is pointed out that “(...)bioenergy systems involve a chain of activities from production of feedstocks to final energy conversion that can pose different sustainability challenges(...)” (European Commission, 2014(b):4). This a tad more precise, than the preceding documents in specifying the conditions under which biomass can lead to

significant GHG savings arguing that it does so, “(...)when sustainably produced and used effectively(...)” (European Commission, 2014(b):4). It is expected that imports of biomass in the form of wood pellets, earlier perceived as the main source of sustainability risks, will increase from 4.3 million tonnes in 2013 to 15-30 in 2020. A radical increase considering the identified increase of 2.7 to 4.3 million tonnes from 2010-2013 (European Commission, 2014(b)). It is pointed out that the largest consumer of these wood pellets is the industrial sector, earlier identified as being the least regulated part of the EU ETS. Thus EU-based industrial firms is envisioned to be able to assign a net increase in GHG emissions of “0” from the combustion of tropical wooden biomass on the basis of LULUCF accounting information which, as identified earlier can give zero or little GHG savings as compared to fossil fuels (European Commission, 2014(b)). Compounding this and broader issues related to the sustainability of biomass, it is identified that only a small minority of member states have put in place regulations on the sustainable production of biomass and forestry governance, as suggested in the report from 2010 covered earlier (European Commission, 2014(b)). It is pointed out that these divergent national standards on a common market, has been met with concern during the commission’s stakeholder processes as being a barrier for intra-community trade and something which may lead to a “race to the bottom” in environmental standards (European Commission, 2014(b)).

These types of concerns are downplayed in the document, where it is pointed out that market actors have created “(...)industry-led sustainability initiatives(...)” (European Commission, 2014(b):10). Furthermore, it is argued that, “*Significant amounts of biomass for material use are already trade within the EU without apparent internal market barriers(...)*” and that “*Most such biomass is consumed within its country of origin, given that such bulky and low value materials are inefficient to transport very far on surface*” concluding that, “(...)any given mill would logically only have to deal with a maximum of between two and four sets of criteria” (European Commission, 2014(b):10). Based on these counter-arguments, it does not seem as there is much concern regarding the potentially negative effects that the absence of common regulation is having on the internal market despite the concerns identified by the commission itself. This seems contradictory to statements covered earlier, regarding the absolute centrality of the internal market in promoting renewables, as one would assume a strategy based on market integration would be based on common criteria. Again, the sort of concerns are predictable from an ES perspective given the absence of universal standards and sufficient public regulation. In specific regards to sustainability issues, the report seems more concerned with justifying why the existing body of EU law is

what it is, rather than conducting any serious analysis of how to ensure the sustainability of biomass. For instance, it is again pointed out that European forests are growing and that regarding imports timber regulation in the EU ensures that sustainability is adhered to “(...)as long as sustainability requirements are part of the legislation of [the] biomass producing country” (European Commission, 2014(b):12). Again, this seems contradictory to earlier points made in similar policy documents, regarding the identified *low* GHG savings of tropical sorts of biomass and in general the wide variation GHG savings from biomass. To reiterate, biomass combustion is accounted for as emitting “zero” GHGs in the EU.

Furthermore, the reasons identified as causing the growth in EU forest area are seemingly unrelated to biomass production and thus biomass production can still contribute negatively in this regard even if the overall trend is positive. Nevertheless, it is pointed out that “*In order to meet growing forest biomass demand for energy and other uses, forest production will need to be intensified across the EU*” (European Commission, 2014(b):12). Which, the European Commission seems committed to promoting, arguing that a reliance on the aforementioned timber regulation, for the purpose of imports, and the forest strategy of 2013 for domestic production relying on yet to be developed Sustainable Forest Management (SFM) criteria (European Commission, 2014(b)). More crucially, the report addresses the absence of operationalised LULUCF from main biomass trading countries and indirectly of the EU itself, stating that the decision covered earlier from 2013 on LULUCF accounting is, “(...)a first step towards the inclusion of the related sector in the EU’s climate policy” while admitting that, “*Such accounting does not, however, address the issue of most imports from third countries*” (European Commission, 2014(b):15). This seem to contradict the emphasis on the aforementioned timber regulation, as the very condition (LULUCF accounting) under which biomass combustion can be accounted for as not emitting any GHGs is, in a very practical sense, an uncertainty. Further compounding these contradictions, in assessing the GHG emissions from biomass over a given plant organisms lifetime, it pointed out that, “*Conventionally, emissions from carbon stock change relate to land use (positive or negative) have not been accounted in a standard approach to Life Cycle Analysis (LCA) because it is implicitly assumed that an almost immediate uptake via plant re-growth of the initially released biogenic carbon takes place*” (European Commission, 2014(b):16). It is pointed out that this is not necessarily true, “(...)in the case of forest biomass, [as] carbon release and sequestration may not be in temporal balance with each other” (European Commission, 2014(b):16). This is further underpinned by a range of studies conducted for the report, which concludes a “large variability” in the established literature regarding the GHG saving results of biomass (European Commission, 2014(b)).

Regardless, it is concluded, “(...)that the vast majority of biomass pathways used today in the EU, whether domestic or imported, provides carbon emission reductions not only over the long term, but also over the medium- short term” (European Commission, 2014(b):17). What the basis is for stating that imported biomass also constitutes a net-saving is difficult to read, as the argument for concluding so regarding domestically sources biomass is that most biomass in the EU originates from forest residues (European Commission, 2014(b)). Even if taken at face-value, this does not say anything about how large the GHG savings are and it is recognised in the report that the lack of proper LULUCF accounting, not just in the EU but globally, constitutes a possible loophole, “(...)which may mean that the emissions accounted for underestimate their actual level” (European Commission, 2014(b):15). Furthermore, in a large impact assessment conducted in 2016 by the European Commission, it is stated that a key risk if bioenergy is that it may have, “minimal or even negative greenhouse gas savings compared to fossil fuels” and that the inclusion of wooden biomass in the forthcoming renewable energy directive of 2018 would increase the use of biomass which, “(...)may lead to limited greenhouse gas savings or to an increase in emissions” (European Commission, 2016 in GEA, 2018:2). Still, it does not seem that the discourse on biomass sustainability changes much here, even if a range of “challenges” are identified around this period.

5.3 Biomass is “Requalified” for the all Important Decade of 2020-2030

2018 saw a plethora of new regulation at the EU-level, related to biomass and the upcoming round of commitments under the Paris Agreement, where the EU committed to submitting emissions related to the LULUCF sector for the first time as part of reaching its committed 40% reduction. This culminated in the second piece of EU legislation on the operationalisation of LULUCF accounting from 2018. Here it is repeated that combustion of biomass can be accounted for as emitting “zero” GHGs as long as proper LULUCF accounting is in place (European Union, 2018(b)). The virtues of biomass are also repeated: “The LULUCF sector also provides biomaterials that can substitute fossil- or carbon-intensive materials and therefore plays an important role in the transition to a low greenhouse-gas-emitting economy” (European Union, 2018(b):2).

The updated renewable energy directive from 2018 also emphasises emissions related to LULUCF recognising that, “(...)the magnitude of greenhouse gas emissions-linked indirect land-use change is capable of negating some or all greenhouse gas emissions savings of individual biofuels, bioliquids or biomass fuels” (European Union, 2018(c):94). It is also deemed necessary to limit the amount of food and feed crops-based biomass fuels, biofuels

and bioliquids while excluding, “*Low indirect land-use change-risk biofuels, bioliquids and biomass fuels(...)*” (European Union, 2018(c):94). The reason given is that methodological challenges in calculating emissions from such biomass products are too imprecise and that this particular type of biomass is liable to be a net-emitter (Ibid.). Thus there is at this time further efforts to qualify biomass as sustainable, by limiting the types of biomass that are perceived to threaten its overall sustainability and by a heightened emphasis on accounting for LULUCF factors. However, the directive still promotes biomass expansion seeing it as underexploited:

“In order to exploit the full potential of biomass, which does not include peat or material embedded in geological formations and/or transformed to fossil, to contribute to the decarbonisation of the economy through its uses for materials and energy, the Union and the Member States should promote greater sustainable mobilisation of existing timber and agricultural resources and the development of new forestry and agriculture production systems, provided that sustainability and greenhouse gas emissions saving criteria are met.” (European Union, 2018(c):96).

Compared to discourse on the perceived sustainability of biomass as a renewable energy source identified earlier in this chapter, the discourse here is similar as biomass is still seen to essentially sustainable, provided that the proper governance is in place. Furthermore, as in the beginning of the chapter, it is still seen as underutilised and hence this central directive on renewable energy attempts to expand the use of biomass for the forthcoming decade. The small changes in regulatory approach that can be identified here can be characterised as taking into account an increasing amount of “risk factors” and this is also seen as desirable as, “*(...)[economic] operators should put in place a risk-based approach*” (European Union, 2018(c):96). Furthermore, “*(...)the Union sustainability and greenhouse gas emissions saving criteria should apply only to electricity and heating from biomass fuels produced in installations with a total rated thermal input equal to or exceeding 20 MW*”. (European Union, 2018(c):97). Similar to other examples identified in this analysis and in the chapter on ETS, the perceived burden of smaller companies here take precedence over sustainability concerns. As identified by the environmental NGO Fern, identified by one informant as the NGO closest to the policy process in Brussels, this risk-based approach is based on the LULUCF framework covered earlier and on nationally-based SFM laws (Appendix, A2; Fern, 2018). Fern (2018) criticises the approach taken here in several ways: 1, the risk-based approach taken here ignores the role that forests and biomass plays as carbon sinks, 2. the

requirements regarding efficiency and ecology for operators are not comprehensive and 3, the directive still allows most of the destructive activities related to biomass production such as using whole trees and allowing co-firing with fossil fuels while incentivizing increase in biomass harvest. Furthermore, the safeguards regarding imports of biomass which are based on the exporting country being a party to the Paris Agreement and having LULUCF accounting are criticised on the basis that one can circumvent these criteria given that economic operators can certify that management practices on the ground are sustainable (Fern, 2018). This means that the EU would be able to continue imports from countries that are not party to the Paris Agreement. This last point is seconded and criticised even more fundamentally by a 2018 scientific opinion by the German Environmental Agency (GEA) which points out that LULUCF accounting rules have not yet been established and that countries tend to use baseline measures which masks negative impacts on forest density reductions and exclude some forests from official accounting (GEA, 2018). Within the EU it is argued that because the renewable energy directive allows for member states to 369 millions of CO₂ equivalent emissions related to forest management intensification, providing that there are similar surpluses in other member states, it incentivises that member states reduces the “carbon sinks” of forests (GEA, 2018). For these reasons, it is concluded that the directive does not ensure that bioenergy contributes to GHG reductions (GEA, 2018). It is further concluded, as mentioned in the problem area, 2018 was also the year where more than 800 scientists proclaimed that biomass combustion is not sustainable and more explicitly that this is because of the very nature of the commodity, due to the carbon debt problem mentioned earlier. (Beddington, 2018). Scientific concerns regarding the sustainability risks relating to biomass seem only to be present in the directive to a limited degree and, as mentioned earlier, biomass is still seen as having significant GHG saving potential and its expansion is still seen as desirable.

The market-based promotion of renewables, including biomass, is also consistent in this last period. In the key strategy paper on the so-called “bioeconomy”, as opposed to a fossil-based economy, it is stated that, *“Deploying a sustainable and circular bioeconomy will boost the competitiveness of the bioeconomy sectors and support the creation of new value chains across Europe while enhancing the overall status of our natural resources”* (European Commission, 2018(e):11). It is further elaborated that *“Delivering a sustainable circular bioeconomy means that our economic prosperity and the health of our environment will mutually reinforce one another”* (European Commission, 2018(e):16). The promotion of renewables in a sustainable and circular fashion, is here framed as brings with it new

economic opportunities for private actors and by extension economic prosperity or growth. Furthermore, this era also saw attempts to consolidate the envisioned Energy Union attempting to integrate the energy markets of the EU, again opting for a strategy based on increased market flexibility (European Union, 2018(d)). Conclusively, there is stability in the general discourse identified in this chapter within the policy documents examined, also in this last section. This hold regarding both the perceived sustainability of biomass and the market and growth-based it is promoted.

Sub-conclusion

In the Problem Area, we posed the question: *What factors can be identified as having significantly contributed to the consolidation of Biomass as the most utilised renewable energy source in EU climate policy?* Conclusively, we can identify similar patterns in this chapter, as in the preceding chapter on the EU ETS. Hence, the case of “biomass as a renewable energy source” shows the similar corresponding characteristics of having a stability in discourse and an instability in the market promoted. Biomass has continuously been promoted under the “green growth” discourse, perceived as being a cost-effective and market-ready renewable energy source which should be expanded. Simultaneously, there has been pressing uncertainty regarding the status of, especially wooden biomass, as a renewable. In the absence of enforceable universal standards, as predicted by Economic Sociology, continuous and increasing uncertainty has been identified throughout the current decade. This uncertainty has been emphasised by various epistemic communities expressing their concerns regarding the reliance on biomass as the dominant renewable energy source within the EU, especially in the absence of common enforceable sustainability standards. However, these market disturbances have not caused any major shifts in the “climate-common-sense” identified in this, and the preceding chapter.

Thus, within the premises of the methodology advanced in this thesis, the stability in discourse can be concluded to be the factor that has kept biomass as a central “market innovation” within climate policy, at the EU-level. As mentioned in the conclusion of the previous chapter, one issue has been to link these discourses to specific actor-coalitions. Here, we have only been able to identify a few member states which have attempted to influence the policy process to head in another direction than the one identified here, towards a significantly more sustainable use of biomass. The most identifiable actor-coalition seems to be that of the different epistemic communities, voicing their disapproval over the perceived lack of sustainability in the current sourcing of biomass. This clear concern on the part of epistemic communities is somewhat of a difference when compared to the previous chapter on the EU ETS, the comparison of which is the topic of the following chapter.

6. Discussing the Comparable and Concluding the Thesis

6.1 *Discussing the Comparable*

As concluded in the sub-conclusions of the analysis chapters, both cases are represented by concurrent instances of discursive stability and market instability. In the case of the EU ETS, market instability was caused by the absence of enforceable price-mechanisms eventually leading to a plummeting of prices in emission allowances, due to the market being oversaturated with allowances in the absence of enforceable price-mechanisms.

In the case of “biomass as a renewable” the market instability, while to a lesser degree than the EU ETS, was identified to be caused by an absence of sustainability standards at the EU-level. However, none of these market instabilities was correlated to an instability in discourse, the second comparative vector investigated in this thesis. In both cases, a consistency regarding the perception of the market and growth-based purpose within the confines of the single market and international markets, and hence the desired expansion and continuation of each policy, was identified. In neo-gramscian terms, this discourse has been identified as the “climate common sense” seen to be hegemonic in both cases.

Thus, based on the legislative and policy documents as well as the secondary sources examined in this thesis, no significant challenge to the perceived market-based efficiency inherent in the discourse legitimising these policies have been identified. In both cases, these consistencies can be, with some uncertainty, related to actor coalitions based on a stable set of north-western member states, centrist parliament coalition and relatively consistent commission. Hence, we have arrived at the following comparative table:

Explanatory Variables:	The European Emission Trading System	Biomass as a sustainable energy source
“Stable discourse”	x	x
“Market stability”	–	–
Outcome Variable:	The European Emission Trading System	Biomass as a sustainable energy source
Climate Cornerstone	X	X

Based on the above table, we can conclude that within the confines of the methodology advanced here, the continued prevalence of these two policies in EU climate politics are

explained due to a stability in discourse regarding the perceived virtues of the policies in question, related to somewhat stable actor coalitions, conceptualised here as social forces or ideological-discursive formations. Furthermore, in the Gramscian terminology used here this indicates a continued *hegemony* in market-based climate policies within the EU based on the policies examined, which has managed to subsume concerns regarding the policies perceived sustainability within its discourse (Apeldoorn, 2009). In Buch-Hansen's terminology, absolutely no "constructive" projects can be identified based on the preceding analysis.

In contrast to Cipler's (2017) analysis, we have not identified any strong counter-hegemonic forces within the analysis.

However, an example of a significant attempt to "deconstruct" the current climate policy can be identified to be present in the biomass case, signified by the vast scientific doubt cast at biomass as a sustainable renewable energy source. Again these concerns seem to have been addressed in a way which subsumes them under the existing market-based paradigm, consistent with the tendencies identified by Apeldoorn (2009). Specifically, concerns regarding the sustainability risks regarding biomass have been incorporated in a way which does not address the issue "head-on" either by limiting the availability of biomass as a renewable energy source, and instead focusing on expanding the "carbon sinks" that biomass are sourced from, or by introducing union-wide criteria for wooden biomass. Instead, concerns are addressed by developing standards indirectly related to biomass production, such as Sustainable Forest Management standards or illegal timber regulation, which allows for the continuous expansion of biomass. Since the letter by almost 800 scientists indicated that such an approach is highly inadequate, one might conclude that the particular project of expanding biomass based on its cost-effectiveness and market availability, is seeing somewhat of a crisis in linking its project to "organic intellectuals", that is intellectuals who aid in the advancement of the project. While the policy has continued with few significant exceptions, the significant changes in scientific consensus are somewhat recent and for indicates that the hegemonic "green growth" approach is continuing. The timeline, however, is arguably too short to say anything conclusive in this regard.

A somewhat similar pattern can be observed in the case of the EU ETS, where concerns regarding the viability of a market-based scheme for GHG emissions have not lead to abandonment of the EU ETS and the development of alternative ways of regulating such emissions, but instead have lead to price-mechanisms that have legitimised the policy's

continuation. Such price-mechanisms, specifically the Market Stability Reserve (MSR), may lead to the programme to becoming more reminiscent of a tax since it puts a floor on allowance prices. The level of this is yet to be seen, but it is unlikely that the market will once again plummet to close to zero. If a certain price-level can be sustained it would, combined with the policy's funding mechanism for sustainable energy, become more similar to a "command and control" style regulation, albeit still being fundamentally market-based. Also, in the EU ETS case the scientific evidence regarding the perceived sustainability effects of the programme, which are strong within the EU institutions, is inconclusive. Therefore, there are somewhat similar tendencies within these policies as regards to the "organic intellectuals" involved in the policy process albeit not as strong as in the biomass case. The overarching conclusion is, however, that the stability in the market-based, and arguably neoliberal, "green growth" approach within the EU is quite hegemonic in the two cases analysed here, despite the scientific challenges to them.

One noticeable shortcoming of this analysis is the lack of depth in which these identified discourses and factors related to market instability are related to actor-coalitions, as is an implicitly point of analysis in the concept of *hegemony* and the neo-gramscian approach at large, while also being conceptually a part of Fairclough's (2010) approach to discourse analysis conceptualised as *ideological-discursive formations*. This is a calculable consequence of not only the method adopted here, its focus being primarily on analysing discourses, but also of longitudinal comparative setup which by design sacrifices detail due to the large temporal scope and the inclusion of more than one case.

While the actor focus of this analysis could have been much stronger in this thesis, we still feel somewhat comfortable in concluding that the stability in discourse is the central force in the continuous advancement of the two policies examined here and that this stability is related to the stable set of actors identified above. This is more clear in the EU ETS case, where secondary sources were available, than in the biomass case where a reliance on news articles was necessary. While market instabilities have arguably hindered the potential effectiveness of these markets and has been the cause of controversy, most noticeable in the EU ETS case, the discourse identified here transcends this instability and provides legitimacy to these policies and the general direction in climate policy in spite of the policies perceived shortcomings.

6.2 Concluding the Thesis

In the problem area we pose the following research question: “*Why did the EU-ETS and biomass policies emerge as key components of the EU’s overall climate change mitigation strategy?*”. In order to answer this overall research question, three subquestions were added related to the literature review and choice of theory and the two cases analysed.

In answering the first subquestion, “*How has the climate policy of the EU been studied within EU studies and why have we chosen the specific theoretical framework?*”, we concluded that there were two identifiable overall strands of EU studies scholarship, mainstream and critical. We further elaborated that it was fitting to situate ourselves in the critical school, specifically within the neo-gramscian perspective, for various reasons related to theory and research topic, despite this strand of scholarship being underutilised in analysing climate policy.

The second subquestion, related to the EU ETS, was posed in the following manner: “*What factors can be identified as having significantly contributed to the consolidation of the EU ETS as a cornerstone in EU climate policy?*”. Here we concluded that discursive stability regarding the perceived virtues of this particular piece of “market innovation” related to climate policy, related to stable actor-coalitions, aided in the persistent advancement and expansion of these policies even in the face of clear aspects of market instability.

Similarly, in answering our last subquestion, “*What factors can be identified as having significantly contributed to the consolidation of Biomass as the most utilised renewable energy source in EU climate policy?*”, it was argued that similar factors were present.

In the face of significant uncertainty related to qualifying biomass as a renewable energy source, discursive stability prevailed regarding the sustainable, cost-effective and market-based virtues of biomass remained. Furthermore, no significant rupture in actor-coalitions was identified, although this element is less clear when compared to the EU ETS for reasons discussed earlier in this chapter.

Overall, when answering the research question within the methodological premises adopted here, it has been made probable that discursive stability on the shape of “green growth” discourse, related to stability in actor-coalitions has aided substantially in the continued promotion of the two policies examined here. While there are no clear indication of any “deconstruction” of any of these two policies, the biomass case could be argued to show attempts by organic intellectuals in attempting to deconstruct the policy through discrediting

the perceived sustainability of biomass. Conversely, in the EU ETS case signs of consolidation are more clear as the market has stabilised for a short period of time, associated with long-term agreements regarding the markets development. However, elements that introduced the uncertainty to begin with are still somewhat present and the jury is still out on whether or not the policy aids effectively in the green transition.

Further critical research on the topic should, with reference to the issues identified here, elaborate on the relation between discourse and actor coalitions, the so-called ideological-discursive formations and how they aid in consolidating hegemony or how their possible contradictions could be cause for social change. In a normative view, this should be done in order to assess how the transition to a post-growth economy, seen in this thesis as necessary, can be achieved. An objective similar to that posed by Buch-Hansen (2018). Furthermore it should, in the spirit of critical scholarship, aim to contribute to emancipation through analysing elements of climate justice, similar to the analysis carried out by Ciplea (2017).

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