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Legal limitations in the establishment of a carbon price floor in the European Union

University of Helsinki
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Commercial Law

Master's thesis
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Tiivistelmä/Referat – Abstract

The European Union's Emission Trading Scheme (ETS) has been suffering from oversupply of the allowances and therefore has not resulted in the desired price levels. The EU has reformed the ETS by creating a Market Stability Reserve that will remove the excess allowances from the market, starting at the beginning of 2019. In spite of that, some member states fear that this will result in allowance prices that are too low to encourage investment to low-carbon technology and facilitate the coal to gas switch. Discretionary price-based mechanisms, such as a carbon price floor and a corridor, with an explicit carbon price objective are currently being discussed and promoted by some member states of the EU, such as France. Such systems would alter the very nature of the existing EU ETS as a quantity-based market instrument. In a price-based system, the carbon price is decided politically rather than by market forces.

A carbon price floor (CPF) means modifying an emission trading system by implementing an instrument that puts a minimum price for emitting a tonne of carbon dioxide, in contrast with the price that is determined by supply and demand of allowances in an emission trading system. A CPF can be implemented by placing a tax on top of the allowance price or imposing a minimum price in the auctions.

The only existing price-based mechanism that correlates with the EU ETS in an EU member state is the UK's national carbon price floor implemented in 2013. A few other initiatives for a price floor are being discussed, one being the national carbon price floor (CPF) in the Netherlands. Currently there are no examples in the EU of an operational regional price-based mechanism covering two or more countries. Price management however has been implemented in some other regional emissions trading systems in the United States, like the Californian ETS (Western Climate Initiative) and the Regional Greenhouse Gas initiative.
Some EU-member countries, especially Poland, are hesitant to increase the ambition of the EU's climate policy goals and therefore an EU-wide carbon price floor is not likely in the coming years.

The following three research questions are studied in this thesis. What is the correct legislative procedure for implementing an EU-wide carbon price floor? Can the carbon price floor be implemented regionally and what are the boundaries from EU legislation's perspective? Can the carbon price floor be implemented by using enhanced cooperation?

An auction reserve price that acts as a minimum price in the EUA auctions could be implemented as an EU-wide instrument by amending the ETS Directive and Auctioning Regulation. Legislation needs to be approved by qualified majority in the Council of the European Union, similarly as the decision establishing the Market Stability Reserve. A carbon price support rate that is a tax on the top of the European Union's allowance price to guarantee a minimum price would require a totally new Directive or a new regulation in the EU as it is explicitly outside the scope of ETS Directive and the Auctioning Regulation. Implementing an environmental tax in the EU requires unanimity in the Council.

An auction reserve price cannot be implemented regionally as the auctioning rules are harmonized and the auction reserve price would hamper the internal market and affect the free movement of goods and capital. A carbon price support rate is possible among two or more member states as taxation affects only domestic entities. This could be implemented by signing a memorandum of understanding (MoU) between member states or by using an EU instrument called enhanced cooperation. An MoU approach is weak, as the participating member states could withdraw easily from the MoU.

Implementation of a tax through enhanced cooperation requires at least nine member states to agree on a joint system. The fulfilment of the enhanced cooperation requirements is uncertain and the arrangement has to be approved by the European Commission and the European Parliament.

Avainsanat – Nyckelord – Keywords
Carbon price floor, enhanced cooperation, TFEU Article 192, competence, special legislative procedure, ordinary legislative procedure, auction reserve price, top-up tax

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Diagrams

Abbreviations

AG	Advocate General
BIT	Bilateral Investment Treaty
BTOE	Million Tonnes of Oil Equivalent
CAT	Cap-and-trade
Third Court of Appeal	
	California Third District Court of Appeal
CARB	California Air Resources Board
CCL	Climate Change Levy
CCS	Carbon Capture and Storage
COP	Conference of the Parties
CPF	Carbon Price Floor
CPS	Carbon Price Support
CSC	Constitution of the State of California
DG-Clima	European Commission Directorate-General for Climate Action
EAG	Guidelines on State Aid for Environmental Protection
EC	Council of the European Union
ECJ	European Court of Justice

EEA	European Economic Area
EP	European Parliament
ER	Energy Roadmap
ETS	Emission Trading System
EU	The European Union
EUA	EU Allowances
FCC	Federal Constitutional Court of Germany
GDP	Gross Domestic Product
GHG	Greenhouse Gas
HM	Her Majesty
IEA	International Energy Agency
IEA CP	International Energy Agency's World Energy Outlook Current Policies Scenario
Inc.	Incorporated
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LRF	Linear Reduction Factor
MOU	Memorandum of Understanding
MS	Member state
MSR	Market Stability Reserve
NAP	National Allocation Plan

NDC	Nationally Determined Contribution
RGGI	The Regional Greenhouse Gas Initiative
SEA	Single European Act
TEC	Treaty Establishing the European Community
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
TNAC	Total Number of Allowances in Circulation
UK	United Kingdom
UNEP	United Nations Environment Programme
US	United States
RES	Renewable Energy Sources
WCI	Western Climate Initiative
WMO	World Meteorological Organization

A The background for reforming the European Union emission trading system

1 Introduction

1.1 Greenhouse gas emissions globally

Progress has been made in the doctrine of international environmental law. The Montreal Protocol, signed in 1987, is an international environmental treaty that aimed to phase-out ozone-depleting substances by the year 2000.[1] Measurements show that the ozone layer is starting to recover.[2] A similar success has been the collective effort to limit sulphur dioxide emissions in the Convention on Long-range Transboundary Air Pollution, signed in 1979.[3] The global community has yet to witness comparable success with, for example, the greenhouse gas emission reductions and the loss of biodiversity.

The Paris Agreement signed in 2015 under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC), aims to limit global warming to well below 2 degrees Celsius and to pursue efforts to limit the warming even further to 1.5 degrees Celsius. To reach the 1.5 degrees Celsius target the emissions would have to reach net-zero around 2050; to reach 2 degrees, the emissions should reach net-zero around 2075.[4] The intention is that all nations will participate in the efforts to mitigate climate change and adapt to it. The Paris Agreement governs a vast range of issues, from climate finance to adaptation. One key feature of the agreement is the nationally determined contributions (NDC). Each party decides independently on the targets and measures to achieve the target and submits its NDC to the secretariat. The NDCs are revised every five years and with the presumption that the ambition level is increased every time. As the parties may decide on their own targets, the NDCs vary significantly. For example, the European Union (EU) is pledging to reduce its GHG emissions at least 40 per cent by 2030 compared to 1990, whereas Pakistan is merely stating that its emissions

[1] United Nations. Montreal Protocol on Substances that Deplete the Ozone Layer. 1987
[2] Ilmatieteenlaitos 2018. News report by the Finnish Meteorogical Institute.
[3] EEA 2018. A 74 per cent drop in the EU's Sulphur Dioxide emissions between 1990 and 2011.
[4] IPCC 2018.

will peak long after 2030 and that it intends to reduce 20 per cent of the projected emissions for 2030 depending on available grants and funds.[5] Currently, the trajectory of combined NDCs does not fulfil the goals of the Paris Agreement. With the reductions provided in the NDCs, the pathway is towards 2.6 to 3.2 degrees Celsius warming by 2100.[6] With roughly 40 gigatonnes (Gt) of annual greenhouse gas emissions (GHG), the remaining carbon budget of 900 Gt is likely to be exceeded in 22 years.[7] Even with the reductions provided in the NDCs, warming of 2 degrees will be exceeded long before 2100. Even more rapid action is needed in order to limit global warming to 1.5 degrees Celsius; the IPCC has estimated that the remaining carbon budget is somewhere between 420 Gt and 580 Gt.[8]

1.2 Carbon pricing

The goals of the Paris Agreement would be substantially easier to achieve, if nations could agree on a universal cap on annual emissions. Each entity could purchase a share of this cap. This would create a global unified carbon price formed by market forces, covering all actions that cause greenhouse gas emissions. The price would adjust to the scarcity of the global carbon budget.[9] The market mechanism would guarantee that emission reduction targets are met in the most cost-efficient manner.

This kind of approach is not likely to take place in the foreseeable future. The rules for the implementation of the Paris Agreement were scheduled to be approved at the 24th Conference of the Parties in Katowice, Poland, in December 2018. The parties could reach an agreement on most of the rules but were not able to agree on the rules relating to international carbon markets. Agreement on these rules was postponed to next year's Conference of the Parties in Chile.[10]

[5] Pakistan's NDC p. 27.
[6] Climate Action Tracker.
[7] MCC-Berlin. This is according to their most optimistic estimate of the remaining carbon budget. The other less optimistic scenarios are made for 720 Gt and 350 Gt of remaining emissions until exceeding two degrees Celsius.
[8] IPCC 2018. p.16.
[9] The amount of GHGs that is globally possible to emit in order to stay within the limits of a desired goal.
[10] UN Climate Press Release December 2018.

Sectoral, global market-based mechanisms are possible; an example of a global market-based system is the aviation sector, which is scheduled to implement an offsetting scheme by 2021.[11] If the system proves successful, it will provide a good model and make it easier for other sectors to follow suit.

The overall trend is that a greater share of emissions will be covered by some form of carbon pricing. Currently approximately 15 per cent of greenhouse gases are covered by an emission trading system (ETS).[12] As new jurisdictions implement ETSs and existing ETSs are expanded to cover more sectors, the likelihood of the establishment of a global carbon market increases.

However, if no universal top-down climate policies are adopted or if the ambition level of the current bottom-up policies does not rise, the future is more ambiguous. The economic growth, population growth and rising living standards will stretch the boundaries that planet earth can sustain. In the International Energy Agency's World Energy Outlook Current Policies Scenario (IEA CP) the world's primary demand for energy will increase from 13 billion tonnes of oil equivalent (Btoe) in 2016 to 19 Btoe in 2040.[13] In 2050 coal will still be an economically feasible option in many parts of the world where it is found in significant quantities and the labour costs are low.[14] In 2017 global energy-related greenhouse gas emissions reached an all-time high at 32.5 Gt of carbon dioxide. The emissions are expected to increase in the coming years. In the IEA CP, we are on the track to 42.7 Gt of energy-related emissions annually in 2040.[15]

Regardless of the depressing overall picture, a lot of positive developments are in the pipeline. Bloomberg New Energy Finance estimates that with the current policies, 48 per cent of electricity will be produced by solar and wind by 2050.[16] In Europe the share of renewable energy sources (RES) is forecasted to reach 87 per cent by 2050. The shrinking cost of storage batteries will help RES to overcome the problem of intermittency. This development, accompanied with the decreasing share of coal used in electricity generation, will in itself reduce emissions. Even though the levelized cost of energy for wind and solar is dropping dramatically, it will not alone be enough to decarbonize the current system and answer to the increasing demand for energy. This could be

[11] International emissions trading system for aviation called CORSIA
[12] ICAP 2018. p.1.
[13] IEA 2017. p.79.
[14] BNEF NEO 2018.
[15] IEA 2017. p. 79. In this scenario there will be no policy changes. The figure includes energy-related emissions.
[16] BNEF NEO 2018. Combining this with nuclear, hydro and other renewable sources the share rises to 71 per cent.

interpreted as a sign that an increasing share of decarbonization is market-based without government's intervention.

The aforementioned data is part of the bigger global story. This thesis focuses on the emissions related to the ETS sector in the EU. It is important to bear in mind that these are not the only sources of emissions and it is more difficult to decarbonize other sectors. Government' intervention is necessary, because even if the world were to eventually decarbonize by itself, it cannot happen fast enough to avoid the detrimental effects of climate change. In the energy sector, climate policies are needed for facilitating the change and for ensuring that it does happen fast enough.

Europe's share of global energy-related emissions is roughly ten per cent and will further shrink to six per cent in 2050.[17] The EU ETS currently represents circa 45 per cent of the EU's GHG emissions. Assuming that the ETS's scope is not expanded, the EU ETS's share of global emissions will shrink somewhere between 0 to 3 per cent of global GHGs in 2050.[18]

These figures show that even a complete reform of the EU ETS would not be enough to achieve the Paris Agreement's targets. Notwithstanding the minor impact on the absolute amount of emissions, increasing the ambition level of the EU ETS will incentivize low-carbon innovations. If these innovations can be scaled globally, the cost of new technologies will decrease everywhere and will have an enormous impact on global GHG emissions. Moreover, in some parts of the EU the energy transition is not self-evident: for example, 80 per cent of Poland's electricity is produced with coal. Even Germany gets 40 per cent of its electricity from coal.[19] If the EU's electricity system could phase out the use of coal and eventually gas-fired power production while having moderate electricity prices, low price volatility and security of supply, this successful transition could act as a model for other jurisdictions. The EU's increased targets will encourage other countries to raise their ambition levels and the EU will have an important role in this transition: leading by example and providing finance and policy models for other regions.

[17] The EU's energy-related emissions were around 3.4 Gt in 2017.

[18] This is due the fact that the EU ETS is one of the most ambitious policies in the world. Presuming that the ETS sector's targets will remain the most ambitious, its share will shrink comparable to other sectors that reduce emissions, but at a slower rate. This figure is not an exact calculation; the intention is to provide context.

[19] ICIS Germany's coal phase-out report. Lignite accounted for 24.2% (134.0 TWh) of Germany’s power production in 2017, while hard coal contributed 14.8% (81.7 TWh).

1.3 The theme of research and main research questions

The current EU ETS has not produced a high enough price for greenhouse gas emissions. This is why some stakeholders have proposed a carbon price floor that would guarantee a certain minimum price for greenhouse gas emissions. A carbon price floor (CPF) means modifying an emission trading system by implementing an instrument that puts a minimum price for emitting a tonne of carbon dioxide, in contrast with the price that is determined by supply and demand of allowances in an emission trading system. A CPF can be implemented by placing a tax on top of the allowance price as has been done in the UK or by imposing a minimum price in the auctions as has been done in California.

The purpose of this thesis is to outline the legal preconditions for establishing a carbon price floor. The focus is especially on the limitations and conditions that derive from EU-legislation. This is because energy and environmental legislation is in the shared competence of EU and its member states meaning that both of them have powers to regulate this policy areas. In the EU, the possible introduction of a carbon price floor has been debated among a few member states, and various stakeholders have expressed their support or opposition towards this measure. In most cases, these proposals have lacked substance on the possible implementation model, governance and the legal feasibility. In order to answer how the carbon price floor would be possible in the EU, following three main questions need to be answered:

First, what is the correct legislative procedure for implementing an EU-wide carbon price floor? This is studied in the context of the UK model and then the same assessment is done regarding the California model. The legislative procedure can mean either qualified majority or unanimity in the Council of the European Union.

Implementing the CPF EU-wide can prove to be politically difficult. The second question is, can the carbon price floor be implemented regionally and what are the boundaries from EU legislation's perspective? This question is answered by studying what is the scope of a member state's legislative competence in the field of environmental legislation. After the competence question is answered, the implementation of the regional carbon price floor is considered by studying different intergovernmental treaties and their assets and liabilities. This is done in order to find a suitable implementation model.

The CPF implemented regionally is not as stable as an EU instrument. Therefore, a rarely used and more permanent and binding regional structure, enhanced cooperation is studied. The third research question is can the carbon price floor be implemented by using enhanced cooperation?

Because the establishment of a CPF within the EU or regionally is a hypothetical reform that may take place in the future, definitive conclusions cannot be drawn. The main aim of the study is to provide guidelines on which options are legally possible and which are not and to distinguish areas where the legality is uncertain and requires further assessment.

1.4 Research methods and materials

This thesis is a legal dogmatic research and all of the three main questions are of legal dogmatic nature. The knowledge interest of the thesis is mainly legislation and legal decision making.[20] This thesis studies the EU primary legislation related to environment and the division of powers between EU and the member states in order to find the legal preconditions for setting a carbon price floor. Furthermore, this thesis provides recommendations on the possible interpretation of the law by studying the legality of legislative reforms suggested in public discussion. The thesis argues why certain legislative reforms would be compatible with the EU-legislation and under what conditions. This thesis is providing de lege lata arguments on the application of the law and de lege ferenda agruments concretizing different solutions presented by various stakeholders in practical implementation models.

Besides legal dogmatic research this thesis utilises a comparative method. Comparative assessments are done, because they offer practical implementation models and provide answers how the legal preconditions for setting a carbon price floor have been dealt with in other jurisdictions. Governments try to learn from each other when designing ETSs. The phenomenon where a law or an institution is copied from one jurisdiction and implemented is called legal transplant.[21] The different carbon price floor models have been earlier implemented in other jurisdictions. Modifying the EU ETS by implementing a carbon price floor which is inspired by the California's or the UK's model is a type of legal transplant. The systems that will be primarily used for comparison

[20] Hirvonen 2011. p. 21-26.
[21] Merry 2006. p. 986.

are the California' ETS and the UK's national taxation related to the EU ETS. Other systems differ more broadly from the EU ETS and are therefore left out of the study. Carbon price floor arrangements were scheduled in the Australian ETS and the United States (US) federal ETS but were never implemented and therefore are not as good reference as the existing systems.

Some nonlegal evaluation has to be done due to the nature of the EU-norms that are studied, their interpretation requires evaluating issues beyond purely legal positivist notions. For example, the question whether a norm is furthering the EU's integration process or undermining the social cohesion is very abstract, especially in the absence of previous case law. These considerations take the research further to social sciences and economic analysis. Furthermore, as these are fundamental questions of the EU's integration, the normative choices are influenced by the values of whoever is interpreting the treaty Articles. This means that an interdisciplinary approach is needed for the proper assessment of the policy options. In this thesis, an elementary economic assessment of the policies is conducted by referring to other studies where the effects of carbon price floor have been studied. This is due to the fact, that it is a question of a hypothetical future reform, only speculations can be made about the actual implementation model. The space constraints do not allow a further study of this aspect.

The EU legislation is the most important material for this thesis. The area of the emphasized CPF is already governed by the EU legislation to some extent. The main pieces of primary legislation studied are Articles 191 to 193, 4, and 326 to 334 of the treaty on the Functioning of the European Union (TFEU) concerning the environment, and Article 20 of the treaty on European Union (TEU).

The EU treaties govern the competence of the EU, the competence of the member states and the relation between these two. Article 4 of the TFEU lists policy areas that are in the shared competence between the EU and the member states. This division of powers is studied to provide understanding of what aspects of emissions trading member states can regulate and what is solely in the EU's competence. Articles 191 to 193 of the TFEU are assessed in order to understand what the correct procedure is for implementing the carbon price floor in the EU. Article 20 of the treaty on European Union sets a provision that provides the basis for enhanced cooperation. Further provisions governing enhanced cooperation are in Articles 326 to 334 of the TFEU. The

European Court of Justice (ECJ) case law is vital for construing the normative content of the generic and abstract primary legislation.[22]

Research in the field of EU law is highly affected by the rulings of the ECJ. As the institution which, in most cases has the final word on the content of EU law, this authority is understandable. But if the ECJ is the only recognized authority, the thesis can be too highly dependent on the previous cases and ultimately opinions of few people. This study aims to be mindful of the context and interpret material from multiple sources. Environmental regulation forms a large part of the material used in this thesis. Environmental regulation reacts to the actions of natural and legal persons, either by preventing destruction of the environment or by retrospectively reacting to environmental loss that has already happened.[23] Environmental policies can range from binding laws to guidelines and self-regulation by companies. The scope of environmental regulation, especially in climate law, often goes beyond national laws. It is worth noting that environmental regulation is based on the results of other sciences. Emission trading schemes and environmental governance in general are based on the extensive research done by biologists, climatologists, meteorologists and scientists from other fields. It is only with the understanding of what their contribution has brought us that 1) we know about global warming and its devastating effects; and 2) we can use that scientific research to calculate the level of greenhouse gas mitigation needed to avoid the worst-case scenario. It could be said that the foundation of environmental law is set by science.

California's state legislation and the UK's CPF-related legislation and case law are the most important material from foreign jurisdictions.[24] International treaties, such as the Paris Agreement and the Vienna Convention on the Law of Treaties, are used as examples of how an international hard law instrument could be used as a method of agreeing on the CPF and what would be the assets and liabilities of different agreements. The Regional Greenhouse Gas Initiative (RGGI) and the Western Climate Initiative (WCI) are examples of a legal instrument that governments can utilize for agreeing on common policy schemes. These examples provide an

[22] In this thesis the European Court of Justice or ECJ is used for both instances of the Court of Justice of the European Union. The European Court of Justice is not an official name and generally it used of Court of Justice -the higher instance, but because case law from other jurisdictions and from times when the EU's Court structure was different are used, the term ECJ is easiest for the reader.
[23] Kokko 2016. 30.
[24] As this thesis is very EU-centric, all non-EU-related material is considered as foreign and used for comparative purposes. Therefore, the UK's domestic legislation is considered to be foreign.

example of a non-hard law agreement governance model which could be utilized to set up the followed when the treaty outside EU's competence is studied.

1.5 The structure of the thesis

This study is divided into four main parts. The part A provides background information to the EU ETS and to the debate around reforming it. Chapter 1 consists of a general introduction to the latest developments in climate policy and puts the study in context. Further it presents the research questions, methods and materials. Chapter 2 goes more into details on the EU's different climate policy instruments and studies the economics behind emission trading and carbon taxation. In chapter 3, the current EU's emission trading legislation and its history is presented.

Part B explains what the carbon price floor is and assesses the legal preconditions of implementing an EU-wide carbon price floor. Chapter 4 presents two different models how the carbon price floor has been built in other ETSs: an auction reserve price in California and a carbon support rate in the UK. Chapter 5 studies legal arguments whether the EU-wide CPF should be implemented using a qualified majority or unanimity in the Council of the European Union.

Part C develops the ideas presented in part B further by starting from a premise that EU-wide carbon price floor proves impossible to be implemented. The same two CPF models that were presented earlier are now studied in a regional sub EU-context. Chapter 6 assesses the competence of a single member state to implement the CPF and compares different types of international agreements that could be utilized for implementing the CPF regionally. Chapter 7 studies the possibility of implementing the CPF with enhanced cooperation. Enhanced cooperation is a procedure where a group of member states uses the EU-institutions to implement legislation on a policy area where agreement cannot be reached at the EU-level.

Part D represents the conclusions of the thesis. Chapter 9 sums up the thesis and presents the most important findings. Furthermore, it shortly presents authors ideas for further research.

Whether the implementation of carbon price floor is beneficial to society is left for other venues to discuss. This is due to the legal nature of the thesis. In order to provide a convincing answer whether a carbon price floor

should be implemented or not, the environmental, economic and societal aspects would have to be studied and measured against each other. This would require an extensive research going far beyond the scope of a legal study.

2 The European Union's climate policy

2.1 European Union's long-term targets

In this chapter the European Union's climate policy framework is explained. The EU ETS is part of a larger climate policy package that is implemented to reach the EU's targets for GHG emission reduction. The European Union implements its climate policies as holistic packages, covering a wide range of economic activities. Currently, the EU has put in place targets for 2020, 2030 and 2050. The 2020 and 2030 targets are accompanied by a larger legislative package. The 2050 Roadmap from 2011 includes milestone targets; a 40 per cent reduction by the year 2030 and a 60 per cent reduction by the year 2040. The roadmap for transforming the EU into a competitive low-carbon economy by 2050 (Low-carbon 2050) sets the EU's long-term emission reduction targets and the strategy on how to get there. Low-carbon 2050 is drafted by Commission's Directorate-General for Climate Action (DG-clima) along with similar initiatives from other Commission's directorates (e.g. 2050 Energy Roadmap and the Transport White Paper) envision the strategy to decarbonize Europe in a cost-effective manner.

These high-level strategies affect the EU ETS as well, because they cover a substantial amount of the EU's GHG emissions; if the ambition of emission reductions is raised, the ETS needs to be modified to correspond with the new targets. Currently, the European Union is in the process of developing a strategy for long-term EU greenhouse gas emissions reductions, relating to this the EU released a document called A Clean Planet for all in November 2018.[25] The packages are more political in nature and they are not implemented using EU's

[25] EC A Clean Planet for all 2018. The document is based on a request from earlier 2018. EC conclusions 2018. " The Council of the European Union invites the Commission to present by the first quarter of 2019 a proposal for a Strategy for long-term EU greenhouse gas emissions reduction in accordance with the Paris Agreement, taking into account the national plans"

legislative instruments. However, the sector specific legislation that is used to enforce these targets can be legally binding e.g. EU ETS directive.

2.2 The 2020 climate and energy package

The 2020 energy and climate package obliges the EU to reduce its greenhouse gas emissions 20 per cent by 2020 compared to the 1990 levels, increase the share of renewable energy to 20 per cent in the energy consumption and improve energy efficiency by 20 per cent. The GHG emission reduction target and the goal to increase the share of renewables are binding, while the energy efficiency target is not legally obligating.[26] The package was formed from six legislative measures that would implement these targets. Regarding emission reductions, a larger reduction is expected from the ETS sector, than from the non-ETS sector, due to the fact that it is more cost-efficient to reduce emissions in these sectors.[27] The burden of non-ETS reductions is not uniform across member states, and several member states are even allowed to increase their emissions during this period of time. The individual targets for each member state are set out in the effort-sharing decision.[28]

2.3 The 2030 Framework for climate and energy

The European Union has set an overall binding target of a 40 per cent emission reduction by 2030 compared to 1990. To achieve this, the sectoral goal for the ETS is a 43 per cent reduction compared to 2005.[29] The GHG emission reduction target is accompanied by a target share of 27 per cent renewable energy consumption and a target of 27 per cent energy efficiency. These targets were agreed in 2014 in the 2030 Framework for climate and energy.[30] The targets were concretized in the Clean Energy For All Europeans package in 2016. Currently, the EU is in the process of putting these targets into legislation and has agreed to increase the ambition level.

[26] Delbeke - Vis 2015. p. 20.
[27] Ibid. p. 20. Sectors, such as agriculture, transportation, services, and small- and medium-sized enterprises are not covered by the EU ETS.
[28] Decision No 406/2009/EC. Recently the effort-sharing decision was continued post-2020 with Regulation (EU) 2018/842.
[29] Hirst 2018. p. 5.
[30] EC conclusions 2014.

For RES, the target will be 32 per cent and for energy efficiency the target is 32.5 per cent. Both of the abovementioned Directives have been recently approved by the Parliament and the Council.[31]

2.4 The 2050 roadmaps

In 2011 the European Commission published a Low-Carbon Roadmap and the 2050 Energy Roadmap that stated that the GHG emissions should be cut by 80-95 per cent compared to 1990 by the year 2050. The Energy Roadmap (ER) acknowledges the importance of the 2020 targets, but it also realizes that these targets will not be enough to decarbonize European Union.[32]

The ER presents different scenarios with variables such as the energy mix, energy efficiency, electrification and new technologies, e.g., carbon capture and storage (CCS). In all scenarios the share of renewable energy (RES) will rise significantly and to at least 55 per cent of the final energy consumption.[33] Another trend that is shown in the scenarios is the increasing electrification of society. Hence, many sectors of society e.g. transportation, heating and cooling, will be increasingly powered by electricity, which in turn leads to a growing demand for electricity, even if energy efficiency increases significantly. Decarbonization with electrification, however, only makes sense if the electricity originates from low-carbon energy sources.

There are a lot of open questions that affect the sum of this equation: Will CCS technology become commercially viable? And, what is the role of nuclear power?[34] Regardless of the energy transformation, conventional means of energy generation are still required; in the diversified energy supply scenario, the role of natural gas in power production will remain important.[35] One possible threat from the increasing renewables is that the very low marginal cost of renewables will drive the electricity price down, which creates a situation where the backup

[31] See more EC RES 2018. Political agreement on renewable energy target sets a new, binding, target for the EU for 2030 of 32%, including a review clause by 2023 for an upward revision of the EU level target.
[32] EC Energy Roadmap 2050, 2011. p. 1. States that the 2020 targets will continue to reduce GHG emissions beyond their scope, but continuing with this pathway will accomplish only a 40 per cent reduction by 2050.
[33] Ibid. p. 8.
[34] Ibid. p. 8-10.
[35] Ibid. p. 13.

power operators cannot operate profitably.[36] The report addresses this issue by calling for policies that ensure electricity generation is secured at all times.

The roadmap for transforming the EU into a competitive low-carbon economy by 2050 assesses mitigation economy-wide and includes sectors, such as agriculture, that are not covered in the Energy Roadmap. The Low-Carbon Roadmap should be used as a basis for sectoral and more specific strategies.[37] However, as energy has a pivotal role in the mitigation of greenhouse gas emissions, the Energy Roadmap and Low-Carbon 2050 are overlapping in many areas.

The Commission presented a new 2050 vision for Europe in November 2018. The document called A Clean Planet for all, A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy aims in achieving climate neutrality by 2050. The new A Clean Planet for all vision presents scenarios and pathways in which the EU achieves varying levels of decarbonisation by 2050. The document does not aim to set binding targets or new obligations.[38] The effect that the renewed vision will have on EU's current climate regulation will be seen in the coming years.

3 The European Union emission trading system

3.1 Basic elements of European Union emission trading system

In chapter three the economic rationale behind emission trading and the history of the EU ETS is described. A special focus is on the reforms that were aimed at improving the functioning of price discovery in the EU ETS.

The basic elements of the EU Emission Trading System are defined in the Emission Trading Directive, which has been implemented in national laws.[39] The list of industries covered by the EU ETS has been amended by changes to the Directive.

[36] This problem is due to the fact that the wind and solar power are not available at all times and during those times the electricity needs to be produced by conventional means, i.e. nuclear, coal, gas etc.
[37] EC Low-Carbon 2050, 2011.
[38] EC A Clean Planet for all 2018.
[39] Directive 2003/87/EC.

The EU ETS is a cap-and-trade based ETS, meaning that the European Commission sets an annually decreasing cap. The cap constitutes allowances that are auctioned or allocated for free during the year.[40] The EU ETS has evolved more towards auctioning and away from free allocation.[41] The EU used to base the free allocation on a method called grandfathering, in which allowances were given to businesses based on their historical emission levels. This method had its problems, e.g. it was more profitable for the backup power generators not to produce energy, and to instead sell the received European Union Allowances (EUAs), because by generating electricity they would have emitted GHGs and would have had to surrender an equal amount of tradable allowances.[42] Since 2013, the EU has used benchmarking and auctioning as a method of allocation.[43]

Undertakings with compliance obligation are required to obtain a GHG emission permit.[44] Furthermore, the aforementioned undertakings are required to submit an amount of -allowances corresponding to their verified emissions by April 30th each year. The level of emissions has to be verified for the system to be reliable. In the EU ETS this is done by a competent outsider.[45]It is worthy to note, that after receiving the allowance, the entity

[40] The revenue from these auctions is received by the members states according to their share of allowances, which is largely based on the emissions during the first phase. Directive 2003/87/EC, Article 3d emphasizes that the auctioning revenues should be used to tackle climate change.

[41] An undertaking can receive an allowance either by free allocation, by purchasing it from an auction, receiving it from the new entrance reserve or by acquiring it from a private party that is willing to sell the allowance (secondary market).

[42] In economic terms this phenomenon is called windfall profit.

[43] Benchmarking is an allocation method that bases the allocation on an efficiency standard. Entities will receive allowances based on average emissions per ton of the most efficient ten per cent of installations.

[44] The ETS directive lists industries, in which entities are obliged to submit a permit e.g. electricity generation, EU's internal aviation and cement and steel production. The permit required by the ETS Directive is common with the permit required by Directive 96/61/EC. In Article 26 of the ETS Directive, the application of Directive 96/61/EC is limited relating to overlapping with emission trading; the permit will not include an emission value limit if the installation is subject to the ETS. Article 26 does not mention taxation or any other form of policy other than efficiency standards, and therefore the application is deemed to be limited to only these efficiency policies. Furthermore, Article 193 of the Lisbon Treaty guarantees that the regulations will not prevent national governments from taking more stringent approaches as long as these approaches are in compliance with the treaties and are notified to the Commission. However, there are some exceptions to this rule. For example, the permit required by the Finnish Environmental Protection Act can set limits to emissions if there is a risk of significant degradation of the environment, even if the installation is subject to the ETS. See more Finnish Environmental Protection Act, Section 55 and Peeters - Uylenburg 2014.

[45] In Finland the emission permit is registered in a system called FINETS (www.paastolupa.fi). The emission permit and the register are not linked to the EU register and it is for the purpose of measuring the actualized emissions. The emission permits are granted for each installation separately. The verifiers are private operators that act as officials whilst verifying the emissions. In the yearly report, the emissions have to be calculated for each fuel separately, and changes in fuel usage and machinery are reported to the authority. The verification process can be done by either by calculating the emissions or by physically metering the emissions

does not necessarily need to surrender it; it can sell it to the market, voluntarily cancel it or bank (save) it for future use.[46]

Participation in the auctions is open to entities that are eligible to apply for an admission to bid.[47] These include entities with compliance obligation, investment firms, credit institutions and public bodies. Participation in the secondary market is not limited; any natural or legal person can buy allowances from the secondary market, the only prerequisite being an account in the Union Registry.[48]

3.2 The economic rationale behind an emission trading system

When governments, states and international organizations are defining their environmental policies, they have a range of options to choose from: they can use command and control regulation, voluntary contracts that encourage environmentally friendly behaviour or just persuade environmentally friendly behaviour, or economic steering mechanisms that internalize the environmental externalities.[49] All these instruments have their advantages and disadvantages and each of them can be used for different purposes. However, the uncoordinated combination of policy instruments and overlapping policies may result in sub-optimized solutions from the point of view of cost-efficiency, make investments riskier, complicate decision making and cause a waterbed effect.[50]

The rationale behind economic steering is found in the principles of the market economy. Accordingly, only in rare cases should a contract between private parties be prohibited, because the prohibition of this contract leads to a welfare loss.[51] Command and control regulation that prohibits the use of fossil fuels tends to be a more expensive and more inflexible way to mitigate climate change than economic steering. By setting price

[46] Hollo 2011. p. 214. However, banking of allowances from the first phase was not allowed. Banking from the second phase to the third was allowed and, for now, it is allowed for subsequent phases.
[47] Commission Regulation (EU) No 1031/2010. Article 18.
[48] Hollo 2011. p. 212.
[49] Nykänen 2006. p. 11-15. This systematization is used by Jussi Nykänen;, this is one way to categorize policy options, but by no means the only one.
[50] Nykänen 2006. p.26.
[51] The exception is when the parties do not have a free choice, or their options are very limited, then the government should interfere.

signals, economic steering guides the demand towards low-carbon technology and creates a situation where only an entity that has to use fossil fuels can afford to do so.[52]

Economic steering, such as ETS or a pollution tax (e.g. carbon tax), is optimal to be used when emissions are measurable, there is a need to reduce pollution but not to ban the polluting activity completely, and it does not matter which installation reduces the emissions.[53] The aforementioned conditions are in place for greenhouse gas emissions, albeit in an optimal situation the economic steering mode used to combat GHGs would be global.[54]

From an economic point of view, this debate can be traced back to Arthur Pigou's and Ronald Coase's discussion on externalities and how we should solve them.[55] According to Pigou, society should put a price on the harmful activity that is equal to the cost on society. Contrary to Pigou, who wanted to limit the harmful activities, Coase argued that the right to cause environmental harm is a commodity and the most efficient way to use it sustainably is by a market mechanism.[56]

This debate has continued and actualized in politics over a discussion whether to mitigate greenhouse gas emissions with emission trading or with a carbon tax.[57] Both of these policy options have their benefits, and the tradeoff is between certainty about prices and certainty about emissions. Under a carbon tax, there is certainty over what is the price of emitting; reciprocally, an emission trading system provides a certainty on the level of emission reductions and reaching the agreed target. Combining these instruments to hybrid policies makes it possible to ease the choice between cost certainty and emission reduction certainty. A carbon price floor or a price collar is an implication of this policy.[58] Purely quantity-based instruments, such as emission trading, are

[52] Soininvaara 1990. p. 18-30.
[53] Soininvaara 1990. p. 86.
[54] Global ETS would truly find the most cost-efficient reductions and would prevent the problem of carbon leakage; however, in the current political situation, this is utopia. Furthermore, offsetting is executing the idea of global ETS; An entity can obtain credits for reducing emissions in a project outside the scope of the ETS; the aim is to bring cost-efficiency and to support emission reductions in developing countries.
[55] Nykänen 2006. p. 9. Nykänen is explaining the debate between Arthur Pigou and Ronald Coase and linking this discussion to emission trading.
[56] Nykänen 2006. p. 10.
[57] For example, during the 1990s the European Union was in disarray over whether it should choose ETS or a carbon tax as the leading instrument for climate policy. The US has not agreed on an underlying federal climate policy instrument, and progress in this area is slow, since the Clean Power Plan is currently stuck in a Circuit Court. See more Scientific America 2018.
[58] Murray 2017. p. 15.

subject to uncertainty about prices. Contrarily, purely price-based instruments, such as carbon tax, are subject to uncertainty on emission reductions, i.e. the environmental goal.

One way to systemize different ETSs is to categorize them into cap-and-trade and baseline-and-credit systems. The EU ETS is a cap-and-trade system. A Cap-and-trade system has a cap, which is the total amount of allowances allocated in the trading period. The method of allocation varies between free allocation and the auctioning of allowances. Each participant is obliged to surrender an amount of allowances equal to their emissions at the end of the respective trading period. The needed amount can be reached either by trading allowances or by reducing emissions. A key element in an ETS is the sanction fee, which is applied in case of non-compliance. The fee in the EU ETS is currently 100 euros per allowance that should have been submitted.

A baseline-and-credit model, such as the United Nation's Kyoto Protocol's Joint implementation and Clean Development Mechanism, create a market for emission reduction projects. The amount of credits is calculated by comparing the reduction to the baseline. The credits obtained from these projects can then be sold or used for compliance purposes.

The idea of the European Union's Emission Trading System and ETSs in general is that emission reductions happen where mitigation is most cost-efficient. Because the cost of emission reduction is different between installations, there is an incentive for every entity to participate in emission trading.[59] Those undertakings that can reduce emissions at a relatively low-cost can either sell their excess allowances or they can to purchase fewer allowances. ETS benefits also those who cannot reduce emissions without high costs incurring, because they can acquire allowances from entities that are able to reduce emissions at lower costs. The greatest cost-efficiency is found where the marginal cost of reducing carbon dioxide is the lowest.[60] When optimally functioning, an emission trading system, promotes investments towards low-carbon technologies by giving price signals to entities that are considering investments. The higher the allowance price is, the more competitive the

[59] Ibid. p.51.
[60] Ibid. p. 17.

low-carbon technologies become.[61] Ideally, the opportunity cost to reduce the emissions is lower than the cost to acquire the needed allowances.[62]

Another key element of the EU ETS is to incentivize low-carbon investments in order to decarbonize the European economy in the longer term. While this aim is considerably overlapping with the purpose of reducing emissions, there is a slight difference. To ensure that investing in new technologies is profitable, the price trajectory needs to be steadily rising. If there is no certainty that the EU ETS will deliver a high enough price that low-carbon technologies are able to compete with traditional solutions in the long-term, the entities might not be willing to make risky investments in new technologies. Regardless of the price development of EUAs, emission reductions are inevitable, because the cap is tightening. However, expensive and risky investments into new technologies that are not necessarily commercially viable are not guaranteed, unless the long-term price signals are high enough.[63] This subject can be traced back to a broader debate concerning the purpose of ETS: is it to limit GHG emissions or to put a price on pollution.[64] The relevance of this debate can be questioned: when the ETS is functioning properly, it puts limit on the amount of GHG emissions that can be released to the atmosphere by the entities with a compliance obligation, whilst simultaneously this limit creates an artificial scarcity of allowance supply, which hikes up the price. In the event that the ETS is not achieving the envisioned price level, the regulator can interfere by limiting the supply that creates more scarcity or can manage the price by setting minimum or maximum prices to the auctions.[65]

[61] Hollo 2011. p. 173.
[62] Draganova 2017. p. 82.
[63] Ibid. p. 83.
[64] Debate between the Pigou and Coase. Nykänen 2006. p. 10.
[65] In the EU ETS, there are currently no discretionary price management measures, besides Article 29a of Directive 2003/83/EC, that allows Member states to auction extra allowances. The Decision 2015/1814 of the European Parliament and of the Council establishing Market Stability Reserve is affecting the supply by postponing auctioning. However, as decided in the fourth phase reform, these allowances will lose their validity if they are not auctioned before 2023. As for the minimum price there is no explicit minimum price in the EUA auctions; however, the auctioning regulation allows the cancellation in the following situation. Commission Regulation (EU) 1031/2010. Article 7."*Where the auction clearing price is significantly under the price on the secondary market prevailing during and immediately before the bidding window when taking into account the short term volatility of the price of allowances over a defined period preceding the auction, the auction platform shall cancel the auction*."

3.3 The history of the European Union Emission Trading System

In the late 1980s and early 1990s, an international framework for climate change mitigation started to form; the Intergovernmental Panel on Climate Change (IPCC) was established in 1988 and the agreement on the United Nations Framework Convention on Climate Change (UNFCCC) was reached in 1992.[66] The UNFCCC established the regime for reporting and cooperating in climate change mitigation and it can be seen as a model for how to do climate agreements. Regardless of the growing interest towards climate change mitigation, no action was taken, or binding regulation enacted until the establishment of the Kyoto Protocol.

The Intergovernmental Panel on Climate Change (IPCC) is an international body, governed by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), which reviews and assesses research about climate change. The goal of the IPCC is to give neutral and fact-based information about climate change.[67]

The United Nations Framework Convention on Climate Change was agreed in 1992, with a compromise result that sets a "common but differentiated responsibility". The Convention has common responsibilities for all of the countries and individual responsibilities for countries listed in Annex I of the agreement. The UNFCCC meets annually in the Conference of the Parties (COP).[68]

In 1990 the EU set a target of stabilizing the emissions to the 1990 level by the year 2000. This target was accomplished, in fairness not solely because of the EU's policies, but with the help of the downturn in the economy.[69]

The EU continued the climate change mitigation and the 1997 burden-sharing agreement set varying individual targets for member states. Notwithstanding, this agreement had to be revised later that year due to new emission reduction targets when Kyoto Protocol was agreed.

[66] Oberthur 2010. p. 29.
[67] IPCC 2018. More on IPCC see, IPCC's webiste or for example Nykänen 2006. p.33
[68] United Nations Framework Convention on Climate Change 1992. See more Nykänen 2006. p.38.
[69] Oberthur 2010. p. 32.

The Kyoto Protocol (KP) is a part of the UNFCCC, but it is only applicable to those countries that have ratified it. The KP sets individual GHG emission reduction targets for the UNFCCC Annex 1 countries.[70] The assigned amount for each country is calculated by first multiplying the 1990 emissions by five and then subtracting the target reduction from this amount.[71]

The idea of emission trading came from the United States. The first commenced ETS was the 1995 sulphur dioxide ETS in the United States. This programme introduced two yet unknown features in the environmental regulation regime: an annual cap on emissions and the possibility to trade received allowances with other participants.[72] Later on, emission trading was brought to the global agenda with the introduction of the Kyoto Protocol in 1997, under the United Nations Framework Convention on Climate Change (UNFCCC). The Kyoto Protocol was a logical continuation to the European Union's climate policy as it had a similar setup with the burden-sharing agreement, individual GHG emission reduction targets for countries based on what is feasible regarding the level of development and emission levels. The Kyoto Protocol introduced flexibility mechanisms in order to ease the process of meeting these targets: Emission Trading, Clean Development Mechanism and Joint Implementation. [73] At first the European Union was sceptical about Emission Trading and tried to promote other means of mitigation but ended-up endorsing the Kyoto Protocol's flexibility mechanism and implementing emission trading as the underlying method of climate policy.[74]

The European Commission's proposal for a Directive in 1992, which would have put forward a Community wide carbon energy tax in the form a levy imposed on the carbon content of a fossil fuel, faced resistance and the Council could not agree on it. Hence Article 157 of the treaty establishing the European Community would have

[70] The United Nations Framework Convention on Climate Change. The Kyoto Protocol Annex 1. See more Nykänen 2006. p.40.
[71] The calculation method is set in the Kyoto Protocol's Article 3.7. *"In the first quantified emission limitation and reduction commitment period, from 2008 to 2012, the assigned amount for each Party included in Annex I shall be equal to the percentage inscribed for it in Annex B of its aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A in 1990, or the base year or period determined in accordance with paragraph 5 above, multiplied by five. Those Parties included in Annex I for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include in their 1990 emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purposes of calculating their assigned amount."*
[72] Burtraw - Szambelan 2009. p. 5.
[73] Kyoto Protocol to the United Nations Framework Convention on Climate Change. 1997.
[74] Wettestad 2015. p. 452.

required unanimous agreement to pass the Directive.[75] The Commission ended up withdrawing the proposal due to resistance from member states and industries.[76]

In 2000 the European Commission presented a green paper that envisioned the idea of ETS as a replacement for the failed carbon tax. The green paper later led the Commission to adopt the ETS directive.

The European Union Emission Trading System is built on the foundation set by the treaty of Rome in 1957 and its revision, the Single European Act (SEA) of 1986. The SEA was an act that amended the European Union's internal market to include new areas, for example environmental issues. This alteration to the European Union's internal market enabled the introduction of an emission trading system. When the Emission Trading Directive was passed, The treaty of Rome was called The treaty establishing the European Community.[77] The treaty establishing the European Community has been renamed again and contemporarily it is The treaty on the Functioning of the European Union.[78]

The EU Emission Trading Directive 2003/87/EC commenced carbon trading in the European Union with a pilot phase from 2005-2007. The EU ETS is phased and designed in a way that the reformations should take place at the beginning of a trading period. The trend in reforming the EU ETS has been towards more auctioning, a more stringent cap, from national allocation plans (NAPs) to one EU-wide cap and the method of allocating allowances for free has changed from grandfathering to EU-wide benchmarking.

3.4 The first and the second phase of the EU ETS

The aim of the first phase (2005-2007) of the EU ETS was to prepare for the Kyoto Protocol's first commitment period 2008-2012 and to familiarize participants with the ETS. The pilot phase included only the power sector, the production and processing of ferrous metals, the mineral industry, and pulp and paper production.[79] In the first phase, the system only covered carbon dioxide emissions. In the second phase reforms, the EU ETS was

[75] Ibid. p. 31.
[76] Convery 2009. p. 393. and Burns 2017. p. 193.
[77] This is mentioned in the preamble of the Directive 2003/87/EC: *"Having regard to the treaty establishing the European Community, and in particular Article 175(1) thereof"*
[78] The treaty was amended and renamed by signing the Lisbon Treaty in 2009. The treaty on the Functioning of the European Union.
[79] Directive 2003/87/EC. Annex 1.

amended to cover more GHGs.[80] During the first phase, the allocation of allowances was left to member states, which had to draft the national allocation plans (NAP). The NAP defined, how the allowances would be allocated, how many EUAs each entity would receive and what percentage of allowances would be auctioned. The member states wanted to protect their industries and allocated generously in their NAPs. Subsequently, this lead to over allocation of allowances and plunging EUA prices, in spite of the Commission's request for modifications of fourteen of twenty-five NAPs.[81] The struggles in the first phase of the EU ETS later led to a more stringent control of the NAPs by the Commission. The allocation was at the discretion of the member states, but this competence was subject to limits that the Directive set for the NAPs. After the member states drafted the NAPs, they were sent to the Commission, which could propose changes. Based on these suggestions, the member states made the final NAP.[82]

3.5 The third phase of EU ETS

The 2009/29/EC ETS Directive was enacted as a part of "climate and energy package" that was executed in order to ensure, that the targets of the 20-20-20 by 2020 package would be achieved.[83] The new Directive, which entered into force in 2013, amended and reformed the EU ETS in various ways, such as:[84] It increased the amount of allowances that would be auctioned and changed the method of pursuing free allocation and replaced the NAPs with an EU-wide cap. The new directive included more sectors and more greenhouse gas emissions in the ETS. Furthermore, it lengthened the upcoming phases and introduced the linear reduction factor (LRF).

This meant that the EU ETS would become more like the US centralized system, where the cap was decided top-down by a central authority. The LRF, meaning the rate at which the overall cap is reduced annually, was set at 1.74 per cent per year, in order to reach a 21 per cent reduction of GHG emissions below 2005 levels by the year 2020.[85] The power sector faced a drastic change starting in 2013 when it was required to purchase all its

[80] De Clara 2018. p. 2.
[81] Burns 2017. p. 212.
[82] Hollo 2011. p. 258.
[83]Oberthur 2010. p. 47.
[84] This kind of summary of the most important amendments is used in Burns 2017.
[85]Oberthur 2010. p. 72.

allowances; this transformation is done gradually in other industries.[86] The overall percentage of allowances auctioned climbed from less than four per cent during the second phase, to more than fifty per cent.[87] Articles 10a and 10c of the Directive set three different methods of allocation that range according to the activity. The ETS Directive was amended to cover new industries, like petrochemicals, ammonia and aluminium. Furthermore, the length of the phases was changed from five years to eight years.[88]

The reforms in the third phase were not limited to the aforementioned changes. Before enacting the legislation for the third phase, the European Union legislature adopted Directive 2008/101, which included aviation in the EU ETS. Airline operators have to surrender emission permits for their emissions during all flights landing or taking off from an airport situated within the European Economic Area (EEA).[89] However, flights taking off or landing outside the EEA are temporarily excluded, and inclusion back into the system has not been scheduled.[90] This inclusion caused controversy amongst the international aviation community, and the regulation was challenged in the High Court of Justice of England and Wales, Queen's Bench Division, that asked for advice on interpretation of the EU legislation. The Court of Justice stated that the inclusion of aviation is compatible with international law.[91]

Sinking prices fuelled the Commission's fear that participants would lose faith in the EU ETS and therefore would not incentivize low-carbon investments. The Commission's answer to the oversupply was to postpone the sale of allowances (backloading). The Commission initiated the process in comitology, hence at its opinion the timing of the auction was in its discretion.[92] The Parliament's environmental committee initially revoked the proposal, but later that year approved it in a new vote.[93] The Parliament and the Council passed a decision, that allowed the Commission to adapt the timetable of the auctions.[94] Factually, the Commission's regulation postpones the

[86] However, some exceptions were left in the power sector as well.
[87] Burns 2017. p. 210.
[88] The third trading period is slated for 2013-2020; the fourth period is from 2021 to 2028.
[89] Directive 2008/101/EC.
[90] This is due to a pending agreement on international emissions trading system for aviation called CORSIA. Evans 2017.
[91] ECJ Aviation 2011. The plaintiffs argued that the inclusion of aviation in the EU ETS constituted a tax, fee or duty that is incompatible with treaties concerning international aviation.
[92] Commission regulation (EU) No. 176/2014
[93] The comitology procedure concerning delegated act is governed by Article 290 of the TFEU. Article contains a safeguard provision that allows the EP and the EC to revoke the delegation and to block the Act from entering into force.
[94] Decision (EU) No 1359/2013.

auction of 900 million allowances, from years 2014-2016 to years 2019 and 2020.[95] Backloading eased the oversupply that was depressing EUA prices, but it could not adequately reduce the excess allowances.[96]

The Market Stability Reserve (MSR) was initially supposed to address the same problem as backloading, but in a more permanent way. The MSR addresses the supply of allowances by withdrawing 12 per cent of EUAs from auctioning and putting them into a reserve when the total number of allowances in circulation (TNAC) surpasses 833 million.[97] Vice versa, the MSR releases 100 million units from the reserve for auctioning, if the amount of allowances in circulation is less than 400 million. The MSR regulation inserts the backloaded allowances that were set to be auctioned in the course of 2019 and 2020 into the same reserve.[98] The MSR will start absorbing EUAs in 2019.[99] The MSR was revised even before it had started functioning. The intake rate was set to rise from 12 to 24 per cent for the first five years of the MSR's operation. This modification was done as a part of the amendment of the ETS Directive that sets the rules for the upcoming fourth phase.

3.6 The fourth phase of the EU ETS

The fourth phase of the EU ETS is scheduled from 2021 to 2030. The greatest revisions that come with the Directive are:[100] Increasing the LRF from 1.74 per cent to 2.2 per cent starting in 2021 and increasing the share of allowances that will be auctioned and renewing rules for the definition of an industry that is at "significant risk of carbon leakage". Furthermore, two funds will be established, an Innovation Fund and a Modernization Fund to support low-carbon technologies and energy efficiency. The method of allocating free allowances will be revised. The intake rate of the Market Stability Reserve will be doubled from 2019 until 2023.[101] Allowances

[95] Burns P2 2017. p. 57.
[96] Burns P2 2017. p. 57.
[97] The TNAC is calculated by deducting the demand and allowances in the MSR from the supply. The supply consists of allowances allocated since 1 January 2008; the demand equals the number of allowances surrendered, cancelled and the holdings of the reserve. See more EC Communication TNAC 2017.
[98] Decision (EU) 2015/1814.
[99] The Commission published the TNAC number for 2019 on 15 May 2018. The TNAC was calculated from the year 2017. The TNAC was 1 654 574 598. This means that at an annual intake of 24 per cent, 265 million units will be reduced from the 2019 auctions. Note that this 265 million is calculated for the first eight months of 2019 and thus represents sixteen per cent of the TNAC.
[100] Directive (EU) 2018/410. See more Burns P2 2017. p. 64.
[101] Directive (EU) 2018/410, Article 2 amending the Decision (EU) 2015/1814.

will be annually permanently cancelled from the Market Stability Reserve from 2023. [102] Lastly, member states may cancel a volume of allowances according to their domestic electricity closures.[103]

The rules for the fourth phase were recently published in the Directive (EU) 2018/410.[104] The MSR reformation can be seen as a fundamental change, because it may cancel some of the allowances in the reserve permanently in 2023. Cancelling these allowances would be the first time the EU carbon market has been altered in this way. While, the cancellation may be contrary to the principle of protection of the legitimate expectations and legal certainty, it is necessary to remove excess supply in order to allow the price discovery to function.

3.7 Price formation and the price development

The EUA price formation process is similar to that of other commodities.[105] The main difference between EUAs and traditional commodities is that the EUA market is a purely politically driven and a completely artificial creation of European Union legislation. Without the legislation that requires emitters to return allowances for their emissions, there would be no demand for EUAs. Therefore, the EUA price is largely affected by the EU's policy changes and expectations of policy changes. In particular, when there is a lot of surplus in the market and the unit prices are low, the main market drivers are policy changes.

Entities that do not receive all of their allowances in free allocation have to participate in the market, either by acquiring the EUAs from auctions or buying them from the secondary market. 57 per cent of the allowances are auctioned during the third trading period. The majority of the trading conducted in the secondary market is done via exchanges.[106] Similar to commodities trading, exchanges offer a variety of products, that can be used for trading. The simplest way to trade allowances is through spot-trading, where the ownership of an allowance

[102] Directive (EU) 2018/410, recital 22. *"Furthermore, as a long-term measure to improve the functioning of the EU ETS, unless otherwise decided in the first review in accordance with Article 3 of Decision (EU) 2015/1814, from 2023 allowances held in the reserve above the total number of allowances auctioned during the previous year should no longer be valid. Regular reviews of the functioning of the reserve should also consider whether to maintain those increased rates."*

[103] De Clara 2018. p. 9.

[104] Directive (EU) 2018/410 was published on 19.3.2018 in the Official Journal of the European Union.

[105] Commodities can be defined as good or services, the quality of which does not vary or varies only slightly by the producer. Traditional commodities are e.g. oil, grain, coffee, coal and natural gas. See more on Investopedia's website. Investopedia 2018.

[106] EUAs can be traded in exchanges, e.g. the Intercontinental exchange or the European Energy Exchange AG. More information on trading can be found in the website of European Energy Exchanges EEEAG 2018.

changes immediately. Commonly, trades are conducted with futures contracts, where the ownership of an allowance changes on a predetermined date at a predetermined price. Another way to trade is with derivatives, e.g. forwards or options.[107]

The trading in the first phase was volatile, due to several factors, including the fact that participants were still familiarizing themselves with emission trading. Furthermore, problems with registries and changing national allocation plans caused uncertainty in 2005. Fluctuations in other commodity prices and stringing NAPs caused the prices to hike to 30 euros in midsummer 2005, although this period of high prices did not last long and prices dropped back to 20 euros.[108] When the first verified emissions became public, it was clear that allocation was over generous. The European Commission acted on this, announcing that banking to the second phase would not be possible, thereby causing a drop in prices.[109] During the first phase, the trading was mainly spot-trading.[110] Hence, as banking was not allowed from the first phase to the second phase, the EUA price sunk at the end of this period.[111]

At the beginning of the second phase the market increased enormously both in terms of size and volume.[112] At the later stage of the second phase the market price decreased greatly due to the economic recession; the market value decreased by almost one third from 2011 to 2012.[113] In the aftermath of the financial crisis, production levels dropped, which naturally lowered emissions.[114]

At the outset of the third phase, allowance prices were down and the price forecasts predicted a bearish future for EUAs. The depressed prices resulted from the oversupply of EUAs, which was caused by the economic recession, the flow of offset credits from outside the EU and overlapping EU-policies that reduced the demand for EUAs.[115] The energy efficiency Directive and the renewable energy Directive were introduced for different

[107] Nykänen 2006. p. 57.
[108] Nykänen 2006. p. 62.
[109] De Clara 2018. p. 3.
[110] Ibid. p. 57.
[111] Delbeke - Vis 2015. p. 31.
[112] Ibid. p. 32. The value increased from 18 billion euros in 2007 to 51 billion in 2008. The volume increased from 998 EUAs to 2,327 EUAs in 2008.
[113] Ibid. p.33.
[114] De Clara p. 4.
[115] Burns P2 2017. p. 54.

purposes than the ETS Directive, but they actually decreased the emissions as well. In addition, some national policies reduced the demand in the ETS sector.[116] Furthermore, more efficient installations and an increased share of renewable energy reduced the demand for EUAs. On top of all that, the allocation was based on the emission levels before the financial crisis, and since the economic activity had slowed, participants were receiving more EUAs than they needed which sank the price even further.[117] This development created a huge surplus of EUAs, a surplus that still exists. Even with the Commission's efforts, e.g. backloading, prices did not rise by much, and the EUA market was stuck at prices of less than 10 euros per tonne from 2012 until 2018.[118] During 2018, the expectations on the MSR have started to affect the EUA. The EUA price has tripled over the last year and many predictions suggest that it will still continue raising.[119] It may be that the buyers are speculators aiming to profit from the expected increase or compliance entities hedging against the future's tightened market.

B EU-wide carbon price floor models

4 Construing the carbon price floor

4.1 The Carbon Price Floor debate in the European Union

In part B the possibility of implementing a carbon price floor at the whole European Union is studied. First, in chapter four, the existing ETSs which have a floor price are presented. Then in chapter five options for how the price floor could actually be implemented are presented. This part of the thesis focuses only on the implementation using EU's legislative instruments e.g. directives and regulations. In 2012 the Commission published a report that contained different options for improving the EU ETS. One of these options was

[116] De Clara 2018. p.4.
[117] Evans 2017.
[118] Ibid. After backloading, the EUA price increased from 5 euros to 8 euros.
[119] In October 2017 the price was around 7 euros per unit, compared to 19.10 euros on 15.10.2018. See more EEEAG 2018.

discretionary price management mechanisms, e.g. a carbon price floor.[120] The Commission's report mentioned two price management measures: Minimum price in the auctions and a price management reserve. The minimum price would possibly operate by setting the smallest amount at which the participants are allowed to bid. The auction reserve price would operate by setting -a price level that acts as the threshold for cancelling all the allowances in a reserve, if it is undercut. Subsequently, allowances would be released if the demand were to increase and reach the ceiling.[121] The intention of the report was to act as a consultation document for stakeholders and the general public to present their views on proposed structural changes to the EU ETS. Generally, most stakeholders were opposed to such a measure and argued that the price discovery functions optimally via market mechanisms. An often-stated concern was that, if national policies, e.g. carbon taxes, capacity mechanisms or carbon price floors are uncoordinated, this would fragment and contradict the original aims of the EU ETS. However, some non-governmental organizations (NGOs) and few energy companies were supportive of a carbon price floor or a ceiling.[122] The report did not consider other options on how to form a carbon floor price, such as a CPF that would be implemented as a tax to top-up the EUA price, government's commitment to buy allowances below a certain price level, or a subsidy that would be paid to entities possessing more EUAs than the amount they are required to submit.[123]

4.2 The top-up tax

The top-up tax approach has been implemented in the United Kingdom. Furthermore, a CPF is currently being considered by a few other EU member states. The Netherlands has planned to implement a national carbon price floor in 2020 that would start with an 18 euro per tonne tax to top-up the EUA price. There are speculations on whether other member states e.g. Italy, France and Germany, would implement a carbon price floor.[124] France has been an active and engaged advocate for a regional carbon price floor and has even involved its highest officials.[125] The CPF debate is linked to the increasing number of coal phase-outs that European countries

[120] In this thesis carbon price floor is used to describe all kinds of measures that are synchronized with the ETS and increase the cost of emitting one tonne of carbon dioxide, e.g. reserve price, or top-up tax. Minimum price is used to describe soft and hard price floors. Top-up tax is used especially in the context of a tax similar to the UK's CPS.
[121] European carbon market 2012.
[122] See more. EC ETS consultation 2012.
[123] Wood - Jotzo 2009. p. 7.
[124] For Germany's position, see Egenter 2018.
[125] French President Emmanuel Macron addressing the European Parliament on 17.4.2018: "Several of you are already involved in this and I hope that in the coming months we will be able to reopen the debate on a carbon price floor."

are pledging. Many of the western European countries are planning to cease coal powered electricity production by 2030 or earlier and have stated that there will be no more investments in coal plants after 2020.[126] Finland is the first EU member state that has made a draft proposal for legislation on coal phase-out; it is currently in the consultation stage. Coal phase-out can be done by a command-and-control regulation, e.g. a regulation that prohibits the use of coal, or it can be implemented via economic steering, such as a carbon price floor. The concept behind a market-based coal phase-out is that the price of GHG emissions will rise very significantly, which in turn makes it impossible for coal-powered power plants to compete with other energy sources.

The United Kingdom's electricity has been largely produced by coal and natural gas.[127] The UK reformed its environmental legislation by introducing the November 2000 United Kingdom's Climate Change Programme. This package included new legislation such as the UK ETS and the Climate Change Levy. The UK ETS was a voluntary, economy-wide, national emission trading system.[128] One of the main purposes of the scheme was to prepare the participants and stakeholders for the anticipated international emission trading system. Subsequently, the scheme was largely overrun by the introduction of the EU ETS.[129] The 2008 Climate Change Act obliges the UK government to reduce carbon emissions by at least 80 per cent by 2050 compared to 1990.[130]

The UK is still a member of the European Union and, consequently, still participating in the EU ETS. In order to put a price on carbon, the UK government wanted to take more stringent measures in the form of Carbon Price Support (CPS). The legal foundation of CPS is the Climate Change Levy (CCL) that was introduced in 2001.[131] The CCL's aim was to meet the UK's goal of a 20 per cent reduction by 2010 compared to 1990 by affecting the energy use of businesses. The CCL is charged on industrial and commercial use of electricity, coal, natural gas and liquefied petroleum gas at a rate that echoes the energy content.[132] The CCL exempted electricity generation from the levy, but from the first of April 2013 the CCL has had a separate CPS rate for fossil fuels used in electricity generation.

[126] EBC 2017.
[127] In 2010, the share of natural gas in electricity generation was 46 per cent, and coal accounted for 29 per cent. See more IEA 2012. p. 129.
[128] EDF 2013.
[129] Ibid.
[130] McEldowney – Salter 2016. p. 62.
[131] McEldowney – Salter 2016. p. 37.
[132] Ibid. p. 47-48.

The UK Carbon Price Floor consists of the European Union's emission allowance price and Carbon Price Support (CPS). Electricity generators that use gas, petroleum gas or other gaseous hydrocarbon in a liquid state or solid fossil fuels, such as coal to generate electricity are obliged to pay the CPS that becomes due when the fuel arrives to the power station.[133] The CPS is enforced by omitting the exemption that the Finance Act 2000 provided for fossil fuel supplies that are used in electricity generation. Since the first of April 2013, these fossil fuel supplies are no longer exempted and the supplies are subject to the Carbon Price Support rate.[134] Carbon Price Support rates are defined for three different commodities that are used in electricity generation: gas in a gaseous state is 0.00331 pounds per kilowatt hour, liquefied petroleum gas is 0.05280 pounds per kilogram, and for coal and other solid fossil fuels is 1.54790 pounds per gigajoule on gross calorific value.[135] The CPS rates are set by Her Majesty's (HM) treasury by multiplying the difference between the government's target price and the average annual ICE-ECX carbon price by the standard carbon emission factors. The CPS rates are settled for three years ahead.[136] Oil is not in the scope of the CCL, but it is regulated under the Hydrocarbon Oil Duties Act 1979. A generator that used oil for electricity generation was able to reclaim the amount of duty paid, after proving that the oil was used for electricity generation. Since the first of April 2013, the amount that can be reclaimed is reduced to equal the CPS in all fossil fuels, with a similar formula that is used to define the CPS rate in the CCL. The intention behind the CPF was to provide an annually rising trajectory that would reach a price of 30 pounds per tonne of carbon dioxide in 2020. This is not likely to happen; hence HM treasury froze the CPS rate at 18 pounds at least until 2020.[137]

4.3 The auction reserve price

The auction reserve price can be combined with a price ceiling, effectively forming a price collar.[138] This price collar operates in a manner similar to the MSR, the difference being that the trigger points are allowance prices rather than quantities of allowances. In case the auction is undersubscribed, all the bidders get the allowances

[133] HMRC CCL1/6.
[134] Finance Act 2013. Paragraph 42 of Schedule 42
[135]The current rates are applicable from 1.4.2016 to 31.3.2019. See HMRC 2016.
[136] Hirst 2018. p. 9.
[137] HMRC 2014.
[138] In 2016 France called for an EU-wide soft price collar in its Non Paper – A soft price collar for the European carbon market 2016. See more ICTSD 2016.

at the floor price. Conversely, if the allowance price at the auction hikes to the level of the price ceiling, more allowances will be released for auctioning. This arrangement is in place in the United States state level ETSs: Regional Greenhouse Gas Initiative and in California's cap-and-trade system.

California's Emission Trading Scheme was initiated in 2012 and the cap-and-trade scheme began with the first compliance period starting on 1 January 2013.[139] California's CAT covers facilities that have average annual emissions greater than 25,000 tonnes of GHGs in the sectors of industrial facilities, electricity generation, electricity imports, etc. This equates to approximately 400 liable entities and 80 per cent of the state's total GHG emissions.[140] The allowance price in the primary market is the lowest bid that allows the last available allowance to be sold.[141]

California's ETS has a price collar, including both a price floor and a price ceiling. The auction reserve price forms the floor price, and the price ceiling is the allowance containment reserve price. The auction reserve price forms a minimum that all the bidders will pay if the auction is undersubscribed, effectually preventing the auction prices from dipping below the floor.[142] These unsold allowances will be put into a reserve and auctioned later on.[143] The price in the secondary markets can go below the auction reserve price.[144]

The allowance price containment reserve releases allowances for auctioning at the price level of the ceiling. Allowances will be sold with fixed prices that rise five per cent and the rate of inflation annually. Currently, the allowance price containment reserve is exhaustible and prices can theoretically go above the ceiling. These reserve sales can be separately held up to four times a year.[145] From 2021 onwards, this ceiling will be hard; meaning, if this reserve exhausts, the allowances will be taken from future years' budgets.[146] Similar price management measures are applied in the ETSs that are linked to California's ETS. For example, Quebec's ETS started with a price floor of 10.75 Canadian dollars, and was set to rise five per cent plus the inflation rate

[139] Bushnell 2017. p. 2.
[140] ICAP 2018. p. 8.
[141] The lowest bid can be equal to or higher than the price floor. Benoit - Cote 2015. p. 56.
[142] IETA 2018.
[143] This is why the price floor is described to be soft. Conversely in the case of a hard price floor the allowances would be permanently cancelled.
[144] Hence the name soft price floor.
[145] Benoit - Cote 2015. p. 56.
[146] ICAP 2018. p. 9.

annually until 2020. In the Western Climate Initiative (WCI) joint auctions, the CPF is set at the level of the highest CPF in the participating jurisdictions.[147]

The models that were presented in this chapter will be assessed from the EU's legislative procedure's point of view in the next chapter. The main question is whether the Council of the European Union needs a unanimous decision to implement the CPF.

5 The implementation of the carbon price floor in the EU

5.1 Different interests within the European Union

What is the correct legislative procedure for implementing an EU-wide carbon price floor? In this chapter this is studied first in the context of the UK model and then the same assessment is done regarding the California model. Before the assessments this chapter presents different decision-making processes in the EU institutions and presents arguments, why a certain procedure should be used to implement the CPF.

It might seem that the European Union is uniform in its ambitious climate policy. However, the reality is not that straightforward. Member states have varying interests, GDPs and natural resources; consequently the starting points for GHG emission reduction in the various member states are different. For example, for some of the Eastern European countries other issues, such as fighting energy poverty and ensuring the security of supply, are a more urgent priority than mitigating climate change.[148] Even the western EU member states with high GDPs have varying views on what the level of ambition should be and what would be the preferable energy mix.[149] These diverging positions make it difficult to agree on common targets and goals in energy and climate policies, especially if the decision is subject to unanimity.

5.2 Legislative procedures

Article 288 of The treaty on the Functioning of the European Union gives the EU the power to execute its competences by regulations, Directives, decisions, recommendations and opinions. These norms can be

[147] Benoit - Cote 2015. p. 56. The WCI is a linked cap-and-trade system, which includes Quebec, California and Ontario.
[148] Poland does not want to increase the ambition. See more CHM 2018.
[149] i.e. The divided positions of France and Germany on nuclear energy. Germany being the world's first country to ban nuclear energy and France having the world's second largest nuclear generation capacity.

legislative, delegated and implementing acts.[150] Legislative acts are adopted either by ordinary or special legislative procedure. Acts that are not adopted according to these procedures are not legislative acts.[151]

Article 191 of the TFEU is The treaty Article that provides the basis for legislative action in the field of environment.[152] The general procedure in Article 192 is the ordinary legislative procedure. The Commission submits the proposal to the European Parliament (EP) and the Council of the European Union (EC), both of which have to accept the proposal. The EP and the EC can suggest amendments to the proposal. The idea behind this procedure is that all the institutions will be involved and will have the power to influence the proposal. In the ordinary legislative procedure, a majority of 55 per cent of the member states representing 65 per cent of the EU's population is required to pass the proposal in the EC.[153] In the ordinary legislative procedure, a simple majority is required in the EP's first reading and an absolute majority in the second reading.[154]

The TFEU Article 289 (2) contains a provision called the special legislative procedure. The procedure is specified in The treaty Article it concerns. Many treaty articles contain a provision that the effect of applying the special legislative procedure is unanimity in the Council e.g. this is the case of primarily fiscal measures.[155] The TFEU Article 192 requires a unanimous decision in the Council for provisions primarily of a fiscal nature and measures significantly affecting a member state's choice between different energy sources and the general structure of its energy supply. Diagram 1 below illustrates the legislative procedures that could be applied in order to approve various types of CPFs.

[150] Craig - De Burca 2011. p. 106.
[151] Craig - De Burca 2011. p. 113.
[152] Article 194 of TFEU which governs energy policy could be argued as the applicable. However, as the CPF is primarily in the same field as the ETS, Article 192 is the correct basis for legislative powers. Furthermore, the requirements for unanimity are similar and the result would likely be the same regardless of Article choice.
[153] Currently 55 per cent translates to 16 out of 28 member states. The 65 per cent requirement varies according to which member states are opposed of the measure. The blocking minority can be formed in theory with a few big member states opposing the measure. Germany solely represents almost half of the required population for a blocking minority with a 16.10 per cent share of population. See more EC voting calculator.
[154] See more EP 2018.
[155] Craig - De Burca 2011. p. 130.

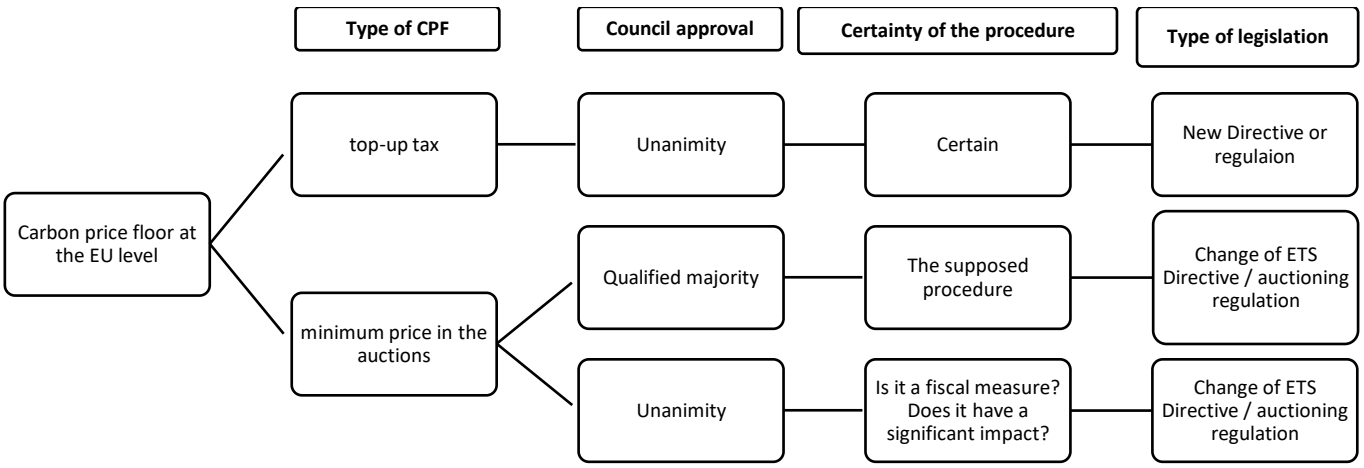

Diagram 1

5.3 Legislative procedure regarding a top-up tax

The top-up tax would need to be implemented as a new Directive or regulation. The top-up tax is arguably out of the ETS Directive's scope. A carbon price floor resembling the UK's top-up tax model would, by definition, fall under the category of a provision of primarily fiscal nature, as it is explicitly a tax. Therefore, it would require a unanimous decision in the Council of the European Union. The preferable implementation method would be a Directive that would set the rates and scope of the tax, but leave discretion for national governments on the administrative issues relating to the collection of the tax.[156] The Directive could specify a similar annually rising tax rate trajectory as the UK's CPF, based on estimates of the EUA price level.[157]

[156] It could be implemented similarly to the Value-added-tax Directive that sets minimum rates for member states, which can choose to impose a higher rate. Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax, recital 29.
[157] HMRC 2014.

5.4 The legal nature of the minimum price

5.4.1 The case law of the European Court of Justice

In order to define the correct legislative procedure for the implementation of a minimum price, the nature of the minimum price needs to be defined. The nature and the outcome of the minimum price determine the correct procedure.[158]

Defining the legal nature of a minimum auction price is not straightforward because it is not explicitly a tax, but it could be considered as a tax. Some guidance can be drawn from the rulings of the European Court of Justice related to the EU ETS. The Advocate General's (AG) opinion in the aviation case was that the EU ETS is not a tax since there is no predefined rate and the amount payable is defined by supply and demand.[159] The ECJ agreed with the AG's view and stated that the financial burden is not a fixed fee imposed by the governments, but set by markets. The ECJ emphasized that the EU ETS should not be considered as a tax, regardless of the fact that the member states have discretion on the revenue spending. Furthermore, it argued that the purpose of the system is not to generate public revenue, but to reduce emissions.

According to the reasoning of the ruling of the European Court of Justice, the key factors in definition of a tax are: the amount is fixed and that it is collected for the purpose of public revenue.[160] The minimum price would set a fixed minimal amount for an allowance, but whether the aim of the minimum price is to generate public revenue is not clear. The main purpose of the minimum price would be to incentivize more investments into clean technologies by providing certainty to the EUA price levels. This does not exclude the fact that it would raise public revenues, which could be considered as one of the purposes for the amendment. According to this determination, the minimum price could be considered as a tax. This would imply that unanimity in the Council is required for creating a CPF. However, the minimum price implemented according to California's model is not absolute and the price can go below the minimum price in the secondary markets. This conclusion would suggest that the minimum price should not be considered as a constituting a fixed amount and therefore not as a tax.

[158]The sections regarding minimum price in this thesis focus on a soft price floor similar to California's, unless explicitly mentioned otherwise.
[159] Ismer-Haussner 2016. p. 74.
[160] ECJ aviation 2011.

However, the EU has not enforced or tried to enforce a policy that would have introduced a minimum price in the auctions. The provision in the auctioning regulation that allows the auctioning platform to cancel the auction if the clearing price is significantly lower than in the secondary market immediately after the auction cannot be considered as a price floor since it varies in every auction and it is not public.[161] Therefore, it is unclear whether it would be considered as a provision of primarily fiscal nature. The EU ETS Directive was implemented according to ordinary legislative procedure. Scholars have discussed whether it was legislated according to the correct procedure and whether it should have been decided unanimously.[162] Nonetheless, the legal basis of the EU ETS Directive has not been contested in the ECJ and, as long as there is no verdict stating contrary, the ETS remains on a solid legal basis. This view is supported by the fact that all the amendments to the Directive so far have been made according to ordinary legislative procedure. In fact, the ECJ has found that the MSR was correctly established in accordance with the ordinary legislative procedure.

The legality of the decision establishing MSR in to the EU ETS was contested in the ECJ by the Polish government. In its decision, the ECJ considered whether the requirement of significant impact was fulfilled. Poland claimed in the plea that the MSR should have been established in accordance with a different legislative procedure, since it is de facto a measure that significantly impacts the member state's choice between different energy sources. The Court rejected Poland's claim on the basis that the MSR is only a tool that ensures the proper functioning of the ETS, and therefore the ordinary legislative procedure was correctly chosen legislative instrument.[163] The Court stated further that it was not necessary to study MSR's possible impact on a single member state's energy mix. This ruling could be interpreted for the possible CPF, if it were found necessary to impose a minimum price in the auctions in order to retain a reasonable price level to reach the goals set out in the Directive, e.g. spur investments in low-carbon technologies. The minimum price could be imposed on the EU level in accordance with ordinary legislative procedure. However, the ECJ and the Advocate General explicitly stated that the MSR is a quantitative measure not aiming to increase the price of an allowance, as Poland claimed in its plea.[164] The minimum price would undoubtedly be aiming to increase the price of an allowance. A definitive conclusion cannot be drawn from the case, whether a price management measure would be treated similarly as a necessity

[161] Commission Regulation (EU) 1031/2010. Article 7.
[162] Ismer-Haussner 2016. p. 73.
[163] ECJ Poland MSR 2018. Paragraph 69.
[164] ECJ Poland MSR 2018. Paragraph 63. Advocate General's opinion paragraph 24.

for the proper functioning of the ETS or as something that is beyond the scope of the Directive and has a significant impact on the member state's choice between energy sources.[165]

5.4.2 Defining cap-and-trade in California

In California a cap-and-trade programme with a soft price collar has been implemented and its legality has been questioned. The legal system of the state of California and the US as a whole are quite different from the EU's sui generis legal structure. The suits against the California Air Resources Board (CARB) offer interesting factors regarding whether the ETS with a soft price floor should be considered as a tax.

A suit by the California Chamber of Commerce was filed against the CARB, arguing that it lacked the authority to construe a cap-and-trade programme, because it is factually a tax. This would have required a two-thirds majority of votes in the Legislature, which the amendment did not have. The District Court of Appeal in Sacramento dismissed the notion and upheld the CARB's right to continue auctions.[166]

The California Chamber of Commerce suit was filed against the Board, its members and its executive officer, following a second suit by Morning Star Packing Company and other claimants against the same defendants on essentially the same grounds. The trial Court saw that these two cases were related and heard a joint oral argument and jointly rejected the petitions. Both plaintiffs appealed and the California Third District Court of Appeal (Third Court of Appeal) consolidated the appeals.[167]

5.4.3 The hallmarks of a tax

The plaintiffs claimed that the CARB did not have the authority to design a market-based emissions reduction system and that the revenue generated by the system amounts to a tax. This would violate the two-thirds

[165] The concern about proper price would be very likely contested especially in the current bullish market where EUA prices have increased more than threefold within a year.

[166] In 2010, proposition 26 was passed; it extended the requirement of a two-thirds majority of votes to any fee, levy, charge or exaction. There are differing views on whether the CARB has the authority to continue the scheme. However, the July 2017 amendment was passed with a greater majority than two-thirds. See more Bushnell 2017, p. 4-5.

[167] The Court system in the United States is divided between federal and state Courts. The state Courts have jurisdiction when the subject matter is state law. In California, there are three levels of state Courts: First instance Courts are superior (trial) Courts, the intermediate Courts of review are the Courts of Appeal and the highest Court in the state is the Supreme Court of California. See California Judicial Branch. Fact Sheet. JC 2018.

majority requirement of the Constitution of the State of California (CSC) Proposition 13. California's Third District Court of Appeal viewed that the auction of allowances does not exceed the scope of legislative delegation given to the CARB. Whether the auctioning should be regarded as a tax, the Third Court of Appeal. stated that auctioning regulation does not fulfil the hallmarks of a tax.[168]

The Third Court of Appeal. upheld the trial Court's decision, that even though the Global Warming Solutions Act did not expressly mention auctioning, the wording of the Act or any other factor did not point out, that a cap-and-trade system in which part of the allowances is auctioned, could not be used to fulfil required emission reductions. The petitioners had essentially seven arguments why there was no mandate for the CARB to effectuate cap-and-trade that would include auctioning feature.[169]

Whether the auctioning system is a tax, subject to Proposition 13 of the Constitution of the State of California, the Third Court of Appeal. did agree with the trial Court's view that the auction sale is not a tax and therefore does not violate Proposition 13 of the CSC. However, the Third Court of Appeal. diverged in the method of analysis, that the trial Court used to determine the violation of Proposition 13. Proposition 13 requires a two-thirds majority in both houses for "Any changes in state taxes enacted for the purpose of increasing rates or changes in methods of computation."[170] The trial Court started to analyze the case with the notion that the term 'tax' has no fixed meaning and, further, looked into cases that distinguish taxes from regulatory fees and was able to categorize different fees. Finally, the trial Court concluded that the primary purpose of these charges is regulatory; the fees are helping to achieve the Act's goal and therefore do not surmount the cost of regulatory

[168] California Chamber of Commerce. p. 5.

[169] 1. The Act does not explicitly authorize auctioning; 2. The lack of discussion in the Legislature about using auctioning as a method of distribution; 3. Other ETSs distribute allowances for free and are revenue neutral or the legislature has explicitly authorized auctioning of allowances; 4. The existence of administrative fee precludes expressio unius est exclusio alterius CARB from generating any other revenue; 5. The CARB assured the Legislature that administrative fees would only be collected to ensure the functioning of the global warming mitigation program; 6. The 2012 auction proceedings regulation was not relevant, because the initial act did not mention auctioning; 7. The failure to pass a bill that would have explicitly mentioned auctioning in 2009. See more California Chamber of Commerce. p. 14.

[170] The Constitution of the State of California, Proposition 13, Section 3 Changes in Taxes: "Any change in state statute which results in any taxpayer paying a higher tax must be imposed by an act passed by not less than two-thirds of all members elected to each of the two houses of the Legislature, except that no new ad valorem taxes on real property, or sales or transaction taxes on the sales of real property may be imposed." However, after the amendment in 2010 (Proposition 26) The wording of the section was changed: "From and after the effective date of this Article, any changes in State taxes enacted for the purpose of increasing revenues collected pursuant thereto whether by increased rates or changes in methods of computation."

activities. The charges are merely a by-product of the programme and the participating entities receive a valuable and tradable right to emit GHGs.

The Third Court of Appeal. analyzed the case differently. It did not see the applicability of "Sinclair Paint" test in this case.[171] It set out two hallmarks of a tax: "It is compulsory and it does not grant any special benefit to the payer."[172]

The plaintiffs claimed that the participation in the auctions is not voluntary, because all of the allowances are not allocated for free and one has to obtain enough allowances in order to continue doing business in California.[173] The Court did not agree with this view because there are ways to reduce GHG emissions, allowances can be bought from the secondary market, and one can obtain offset credits from funding emission reduction projects outside the scheme. In addition, the Court pointed out that non-compliant entities participate in the secondary market, as opposed to taxes.[174] Judge J. Hull left a dissenting opinion stating that the participation is not voluntary. He argued that it is no different than saying that paying income tax is voluntary, because one has the option to not earn income. In his opinion, acquiring allowances from the auctions is necessary, if the compliant entity wishes to do business in the state of California.[175]

5.4.4 Benefit to the payer

The plaintiffs backed up their claims by pointing out that polluting air in California was free before the CAT scheme. The Court dismissed the argument as meaningless by responding that no one has a vested right to pollute California's air. Alternatively the CARB could have enacted a command-and-control programme that would have left the entities with no other option than emission reductions.

[171] California Chamber of Commerce. p. 37. In the Sinclair Paint Co. v. State Bd. of Equalization (1997) the Court was to define whether a revenue collecting measure is a tax or a fee. According to the so-called Sinclair Paint test fees or assessments are: special assessments, based on the value of benefits conferred on property; development fees, exacted in return for permits or other government privileges; or regulatory fees, imposed under the police power. If none of the abovementioned conditions are fulfilled, the fee in question is a tax.
[172] California Chamber of Commerce.
[173] Comment by Morningstar's expert and employee Janet Rabo. California Chamber of Commerce. p. 41.
[174] Note made by Environmental Defense Fund. Ibid. p. 39.
[175] Dissenting opinion. Ibid. p. 54-78.

Furthermore, the Court looked at whether or not the allowances are valuable commodities. The California Code of Regulations § 95820 states that an allowance does not constitute a property right. However, the concept of a property right depends on the context, and the Court made a distinction between due process property rights and takings property rights.[176] As stated in the regulation, an allowance does not construe a property right in the takings sense. Allowances can be revoked or modified as a result of changes in state policy. This does not mean that the allowance holder would not have property rights in any sense; the owner is allowed to transfer the allowances and exclude others from the use of that particular allowance. This makes it a property right in the due process sense. The Third Court of Appeal. ruled that since no one is compelled to buy allowances and the allowances are a valuable and tradable item, it is not a tax. Therefore, it does not violate Proposition 13.[177] In the dissenting opinion Judge J. Hull pointed out again that the plain language of the Act states that the allowances do not construe a property right and therefore it is not a valuable commodity.[178]

The requirement of a two-thirds majority is seemingly similar to the TFEU's requirement of unanimity. However, the scope is much broader in California, as "any changes" require a two-thirds majority; in the EU only "provisions of primarily fiscal nature" require unanimity. In the 2010 amendment in California the wording was changed to apply only to "taxes enacted for the purpose of increasing revenues". The ECJ applied this same rationale when it stated that the inclusion of aviation to the EU ETS does not constitute a tax on aviation.[179]

5.4.5 Legislative procedure for the implementation of the minimum price

The minimum price in the auctions could be implemented by amending the ETS Directive and the auctioning regulation. This is due to the fact that the minimum price would be incorporated in the ETS and therefore fall within the scope of existing regulation. The minimum price could also be possible to implement it as a completely new Directive, regulation or decision, but preferably the change would be incorporated by amending existing legislation. The procedure would likely be the ordinary legislative procedure, a qualified majority in the

[176] Takings Clause is referring to the US Constitution's Fifth Amendment: "...nor shall private property be taken for public, without just compensation." Due Process is referring to the US Constitution's Fifth Amendment: "No person shall... be deprived of life, liberty, or property, without due process of law..." and the Fourteenth Amendment: "Nor shall any State deprive any person of life, liberty, or property, without due process of law…" See the Heritage Foundation, 2017. Takings Clause and Due Process Clause.
[177] Ibid. p. 29.
[178] Dissenting opinion. Ibid. p. 54-78.
[179] ECJ aviation 2011.

Council, as all of the ETS amendments have been implemented in this manner. The equivalent procedure used in California's CAT, which resembles what the EU ETS with a soft price floor would probably look like.[180] The requirements for legislative changes are different in California, but the core element is similar; to ensure that legislation that has a big impact receives sufficient support in the legislature.[181]

The amendment could be challenged in the ECJ on the grounds of incorrect legislative procedure. The TFEU Article 263 allows the ECJ to conduct judicial review if essential procedural requirements are violated or The treaty Articles are infringed.[182] The petitioners would be likely arguing that the amendment should have been adopted unanimously. If the EU is waiting until all member states can agree on introduction of price management measures, these measures are likely to never be implemented.

C Regional carbon price floor models

6. Member states' competence to introduce a carbon price floor

6.1 Division of competence between member states and the European Union

This part of the thesis assesses the possibility of implementing a carbon price floor in a sub EU-level in two or more member states. This regional model is considered because it is not certain whether there is enough political support to set a price floor in the EU-level. The same two models; the top-up tax and the minimum price in the auctions are assessed. The means of cooperation that this thesis studies are an international agreement between participating governments and an EU-legislative instrument enhanced cooperation. As the diagram 2 above shows in total four different instruments are studied. Chapter six looks at what is the

[180] If, the special legislative procedure would prove to be the right procedure, unanimous support for introducing a CPF is not likely in the foreseeable future.
[181] In the EU, this requirement is for securing the member state's sovereignty.
[182] TFEU Article 263. "The Court of Justice of the European Union shall review the legality of legislative acts, of acts of the Council, of the Commission. It shall for this purpose have jurisdiction in actions brought by a Member state, the European Parliament, the Council or the Commission on grounds of lack of competence, infringement of an essential procedural requirement, infringement of the Treaties or of any rule of law relating to their application, or misuse of powers."

competence of a member state to unilaterally modify and add elements to the ETS. After this the upsides and downsides of different type of international agreements are studied. This is because, if the price floor is implemented using the unilateral competence, the participating states have to use some sort of agreement in order to make the cooperation stable. The chapter seven assesses alternative cooperation model for international agreements: an EU legislative instrument called enhanced cooperation.

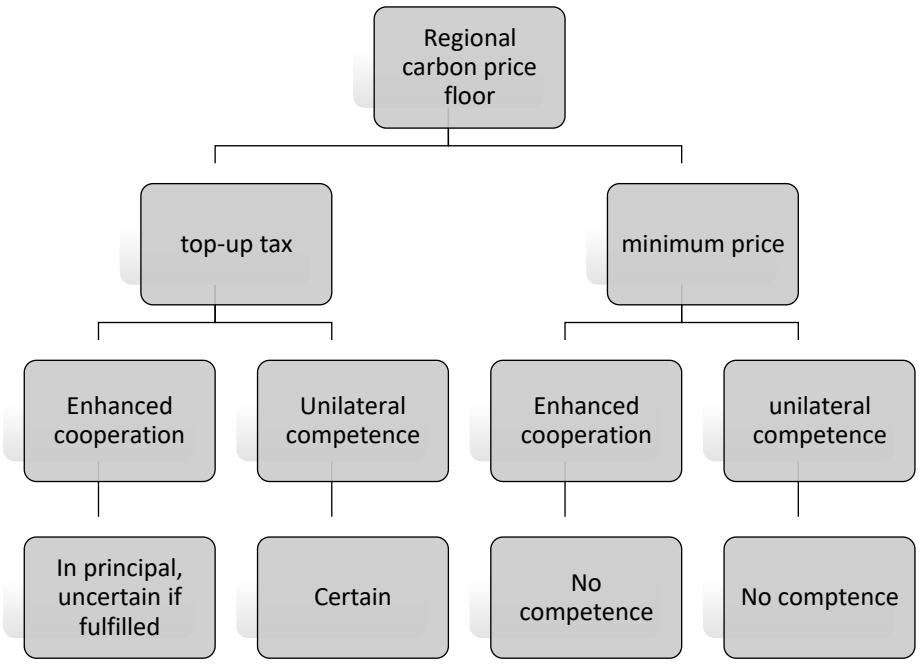

Diagram 2

Assuming that the carbon price floor is implemented similarly to the California system but still could not get the required majority to be implemented in the European Union scale, it could then be implemented regionally. The underlying rationale behind France's proposal of establishing a regional carbon price floor is that many member states will likely be opposed to the establishment of an EU-wide minimum price. In a regional solution only those member states that are willing to participate in the cooperation will participate; therefore, the participating member states can decide on the issue amongst themselves.

The studied options how to implement a regional carbon price floor to the EU ETS are: a treaty outside the EU legal framework and an enhanced cooperation mechanism within the EU Treaties. If the CPF is implemented within the framework of enhanced cooperation, the rules governing that cooperation will define the legality of the proposed CPF. Regarding a treaty outside the EU's legal framework, the legality is equal to a single member state's ability to unilaterally implement the CPF.

The competence of the European Union is attributed, meaning that the EU has competence only in areas where it is given in the treaties, and the competence not given to the EU shall remain with the member states. This division of powers was clarified in the Lisbon Treaty.[183] The competence given to the EU is divided into exclusive competence, shared competence and competence to take supporting, coordinating or supplementary action.[184]

The area of shared competence covers a broad variety of activities and it is envisioned to be the default competence; if the competence is not exclusive or supportive it is shared. The member states may use their legislative powers, if the EU has not exercised its powers or the EU has ceased to exercise its powers. This legislative power of a member state can only be utilized to the extent that the EU has not exercised its legislative competence.[185] Article 4 of the TFEU has a non-exhaustive list of areas that are in the area of shared competence including, e.g., internal market, environment and energy. The paradigm shift towards a more EU led system came along with the Lisbon Treaty; and subsequently, energy policy has been a shared competence. Especially regarding energy, this transition is not self-evident, as it has traditionally been a sector of the economy that has been largely at the full discretion of member states.

In the field of shared competence, a legal principle called the pre-emption doctrine is applied.[186] The pre-emption doctrine was amplified in the Lisbon Treaty. Article 2(2) of the TFEU states: *"The Member states shall exercise their competence to the extent that the Union has not exercised its competence."* According to this doctrine, member states can exercise their legislative competence, as long as the EU has not exercised its competence and shall cease to exercise their competence when the EU has exercised its competence. The loss

[183] Article 5, TEU.
[184] Article 2, TFEU.
[185] Article 2, TFEU. The so-called pre-emption doctrine.

[186] Craig - De Burca, Evolution 2011. P. 245

of the member states' power to enact legislation is ultimately for the ECJ to decide. The pre-emption doctrine is linked closely to the supremacy of EU law. The supremacy of EU law means that in the normative hierarchy EU law is lex superior derogat legi inferiori in relation to national law. Meaning; if a national and EU law are leading to conflicting results, the latter will be applied.[187]

6.2 Competence to introduce a regional top-up tax

While taxation traditionally has been a policy area largely at the discretion of member states, the national tax has to be compatible with the requirements of the internal market. Article 110 of the TFEU prohibits the use of protectionist taxation measures.[188] For the tax measure to be compatible with Article 110 of the TFEU, it has to pursue aims that are compatible with the treaties and secondary law, the base for levying the tax has to be objective and the tax cannot discriminate between domestic production and production in other member states.[189] A top-up tax would be based on the carbon content of the fuel used for electricity generation. If it were levied similarly as in the UK for gas, coal and oil, the basis would be objective and non-discriminatory because the rate is the same - regardless of where the fuel is coming from. The aim is clearly in line with the aim of promoting prudent and rational utilization of natural resources, mentioned in Article 191 of the TFEU.

Besides that, a top-up tax is compatible with the secondary legislation. As for the secondary legislation, the EU's Directive on taxation of energy products and electricity (energy tax directive) and the Directive on general arrangements for excise duty (excise duty directive) provide the governing framework.[190] The general rule in the energy tax directive is that energy products used for electricity production are exempted from taxation.[191] However, a derogation in the same Article allows member states to tax energy products used for electricity production for environmental policy purposes, provided that the tax is compatible with the excise duty Directive. Article 1 of the excise duty Directive allows the introduction of an excise duty to goods that are in the

[187] Craig - De Burca, Evolution 2011. P. 245. More on the hierarchy of laws see Raitio 2012. p. 4.
[188] TFEU Article 110. "No Member state shall impose, directly or indirectly, on the products of other Member states any internal taxation of any kind in excess of that imposed directly or indirectly on similar domestic products. Furthermore, no Member state shall impose on the products of other Member states any internal taxation of such a nature as to afford indirect protection to other products."
[189] Sadeleer 2014. p. 254.
[190] Directive 2003/96/EC and Directive 2008/118/EC.
[191] Directive 2003/96/EC. Article 14.

scope of the energy taxation Directive.[192] A top-up tax levied on the carbon content of the fuel used for electricity generation is clearly implemented for an environmental policy purpose and is levied on a good mentioned in energy tax Directive e.g. coal, gas and oil.[193] Moreover, the UK has already implemented a national CPF that has been approved by the Commission. In its reply to the UK's state aid notification, the Commission affirmed that the CPF is a non-harmonized tax covered by the Directive 2008/118/EC.[194] It is clear that other member states are allowed to do the same tax arrangement that the UK has. There is no difference in whether the CPF would be implemented unilaterally by a single member state or if this would be done in multiple member states simultaneously due to a multilateral agreement.

6.3 Competence to introduce a regional minimum price

6.3.1 The effect of the carbon price floor

A regionally implemented minimum price in the auctions would modify the functioning of the EU ETS significantly. Participating member states would impose a minimum price to their share of auctioned allowances and the non-participating member states would continue to auction their allowances without the minimum price, as before. The problem with this approach is that the demand for the allowances auctioned without a minimum price would increase, since obviously entities located in the participating member states would still want to purchase their allowances at the cheapest possible price. This phenomenon would increase the price of regular allowances without the price floor. Tackling the increased demand would require limiting the possibility to purchase other allowances than those with the CPF. Fragmenting the EU-wide market does not strike as a good idea and the legality of this measure is questionable. The following questions need to be answered in order to know whether EU legislation allows these measures: Is it possible for the member states to regulate the auctions, since the EU has already implemented auctioning regulation? Can a single member state impose a minimum price for the allowances it auctions? Is it possible for a member state to force its entities to purchase allowances solely from its own auctions?

[192] Directive 2008/118/EC. Article 1.
[193] Directive 2003/96/EC. Annex 1. Table C.
[194] EU-UK CPF 2014.

If a single member state has the competence to regulate the aforementioned areas, it is clear that a group of member states can do the same. If, a majority of the EU member states wanted to include price management measures in the ETS, it would be advisable to go ahead with an EU-wide solution.

6.3.2 The pre-emption doctrine

The EU has implemented an auctioning regulation that unifies the auctioning procedure. Directive 2003/87 states: *"By 30 June 2010, the Commission shall adopt a regulation on timing, administration and other aspects of auctioning to ensure that it is conducted in an open, transparent, harmonized and non-discriminatory manner."* Article 7 of the auctioning regulation governs the formation of the clearing price: "*An auction platform shall sort bids submitted to it in the order of the price bid. Where the price of several bids is the same, these bids shall be sorted through a random selection according to an algorithm determined by the auction platform before the auction. The volumes bid shall be added up, starting with the highest bid price. The price of the bid at which the sum of the volumes bid matches or exceeds the volume of allowances auctioned shall be the auction clearing price.*" The auctioning regulation allows member states to opt out of the EU's common auctioning platform and have their national auctions held in a different platform. Germany, the UK and Poland have resorted to this option. Regardless of the opt out, member states are still subject to the same auctioning rules. As the price formation is already regulated in the auctioning regulation, it does not leave competence for member states to modify the auctioning by introducing minimum prices or other unilateral measures. Therefore, the member states would not have the competence to introduce price regulations unilaterally or multilaterally without changing the auctioning regulation on the EU level.

6.3.3 Article 193 of The treaty on the Functioning of the European Union

The subject needs further studying, since the EU ETS falls under the category of environment and it is implemented on the basis of Article 192 of the TFEU. The EU has enacted the auctioning regulation, which explicitly puts in place a governing framework on how the price forms in the auctions.[195] Unilaterally imposing a minimum price in the auctions would affect entities from every member state, since the auctions are open for participation for entities from all member states, and the demand for allowances without the minimum price

[195] Commission Regulation (EU) 1031/2010.

would naturally increase. This could be avoided by requiring the entities from the member state that is imposing the minimum price to purchase only allowances with the minimum price. This restriction would limit the price increase only to entities that are from the member state imposing the measure. Regardless of whether the system would be amended with or without the minimum price, the legality of this revision would likely be subject to challenges that might find the regional minimum price in the auctions incompatible with the TFEU. This could be done under an exception included in Article 193 that allows member states to adopt more stringent measures for environmental protection, provided that these measures are compatible with The treaty Articles, albeit the EU has used its competence. In the ECJ case law applying Article 193, two conditions that the restriction needs to fill have been developed: it cannot undermine the coherence of the harmonization rule and it has to be compatible with The treaty law.

Compatibility with The treaty Articles

The meaning of "compatible with The treaty Articles" needs further clarification. This requirement can be divided into cases where the measure affects the trade between member states and where it does not.[196] The unilateral price increase clearly affects trade between member states. A minimum price imposed even by a single member state would limit the demand for those particular allowances and the ECJ could interpret this as a barrier to trade. More precisely, this measure could be seen as a violation of the free movement of goods or a violation of the free movement of capital, depending on how the EUA is seen legally. In the EU, the legal status of an EUA is not as clearly framed as it is in California's ETS.[197] The Emission Trading Directive describes an allowance as a tradable permit to emit a tonne of carbon dioxide equivalent during a specified period. The legal nature of an EUA is explained more widely in the registry regulation's Article 40: "An allowance or a Kyoto unit shall be a fungible, dematerialized instrument that is tradable on the market."[198] The EUA has been defined variously in the market context as well. For example, earlier the EUA was seen as a commodity in the spot market and as a financial instrument in the futures market.[199] The introduction of the amendment to the Directive on Markets in Financial Instruments defined EUAs as financial instruments, both in the derivatives market and the

[196] Sadeleer 2014. p. 354.
[197] The allowance is a valuable commodity. It constitutes a property right between individuals, but not between an individual and the state.
[198] There are many reasons why it is important to define the nature of the EUA, for example for taxation and accounting purposes.
[199] See more Bennet 2010. p. 1592.

spot market.[200] It seems that the definition of the EUA depends on the situation. De lege ferenda, it would be good to modify the Emission Trading Directive to clearly state what an allowance is, to provide certainty for a uniform approach across the EU.

Defining the legal nature of an allowance is important for the possible modification of the auctioning rules unilaterally - especially, if this includes fragmenting the market by restricting the ability of companies registered in a certain country to purchase other allowances than those with the minimum price. It would affect the movement and tradability of the allowances; therefore, it is vital to find out under which area of the EU's fundamental freedoms the movement of EUAs fall. The practical solution is to regard the restrictions both from the perspective of the free movement of capital and the free movement of goods. The second step in assessing the acceptability of the more restrictive measure is the necessity and the proportionality test. It imposes a requirement that the more stringent measure should be allowed, unless it has a significantly disproportionate effect on free movement.[201] This again is a matter of interpretation and would differ depending on which country or countries implement the minimum price. Depending on the magnitude of impact that the measure has on free movement, it might not prove compatible with the requirements for undertaking a more stringent measure, provided in Article 193 of the TFEU.

The harmonization

Hitherto, in the application of the TFEU Article 193 the ECJ has imposed further requirements and it has not allowed derogation from the EU secondary legislation, if it is fully harmonized. The EU ETS Directive and the auctioning regulation are not fully harmonized, since they leave room for national choices, for example extending ETS to cover other sectors. The ECJ has required that a derogation that puts in place a more stringent measure in an area that is not fully harmonized cannot undermine the coherence of the harmonization rule. [202]Sadeleer gives an example that nothing prevents a member state from unilaterally increasing the fine for not

[200] Directive 2014/65/EU.
[201] Sadeleer 2014. p. 356-357.

[202] See ECJ Landfill 2005. Paragraph 38 and ECJ waste 2001. Paragraph 45.

submitting an allowance. However, he gives another example that requiring new installations to be equipped with carbon capture technology would not be possible on the basis of Article 193.[203]

The compatibility of a national more stringent environmental measure with the EU legislation has been assessed by the ECJ several times. In a waste landfilling case, the ECJ ruled that a more stringent national measure can be implemented, if it pursues the same objectives as the EU-level regulation.[204] In a case relating to the shipment of waste, the ECJ stated that national measures need to be compatible with the regulation referred to and with all EU legislation and principles.[205] In a case regarding the application of a gift tax to the freely allocated allowances, the ECJ stated that the national tax was not to be considered as a more stringent measure in the meaning of Article 193 of the TFEU.[206] The Emission Trading Directive contained a provision that 90 per cent of the allowances were to be allocated for free between the years 2008 and 2012. According to the ECJ, a tax that would be levied on the freely allocated allowances would be contrary to the aim of the Directive. In the case regarding Italian bird conservation legislation, strengthened earlier, the ECJ adopted the interpretation that if the national more stringent measure is pursuing the same objectives as the directive, then it is allowed to go further than the Directive.[207] In the case concerning the legality of the MSR, the ECJ stated that the merits of the legal basis of a certain measure are to be contested by the aim and the content of the act. This means that the act is to be studied against the aim and the actual effect of the implementation of the act.[208]

The minimum price implemented on the grounds of Article 193 would need to be furthering the aims of the Emission Trading Directive and the auctioning regulation in a way that it does not violate the fundamental freedoms. The minimum price would be in contrast with the harmonizing aim of the Directive and the auctioning regulation. Combined with the concerns of barriers to free movement, a member state might not be able to utilize the exception provided in Article 193.

[203] Sadeleer 2014. p. 354.
[204] ECJ Landfill 2005. Paragraph 38.
[205] ECJ waste 2001. Paragraph 45.
[206] ECJ gift tax. Paragraph 25.
[207] ECJ conservation of wild birds 2011. Paragraph 50.
[208] ECJ Poland MSR 2018.

6.4 Treaty outside the EU's legislative framework

As the chapter 6.1 analysis shows, member states do have the competence to implement a top-up tax unilaterally. There is no obstacle for multiple member states to do this simultaneously. Two or more member states could agree on implementing a top-up tax via an international treaty or an international soft law agreement. The upside of a treaty without involving the EU is the increased flexibility and the speed of implementation, which would not be possible with the EU's procedural bureaucracy.[209] On the downside, the stability and uniformity will suffer and the transaction costs involved in multilateral negotiations are higher.[210]

In the history of European integration plenty of treaties have been signed between member states outside the spheres of the European Union's institutional framework. The Schengen Treaty did not originally involve the EU, and the Benelux and Nordic cooperation are examples of alternative integration.[211] A more specific area of cooperation would be Norway' and Sweden's bilateral electricity certificate market.[212]

A good model to use in regional CPF could be the Prum Convention. The Prum Convention is an intergovernmental cooperation agreement on combating cross-border crime and terrorism. The agreement was concluded outside the EU's institutional framework. This being said, The treaty is implemented without prejudice to the European Union law and is open to any EU member state.[213] Furthermore, the preamble of the Convention mentions, an explicit aim to bring the Prum Convention into the EU framework.

These examples prove that even though member states have given away part of their sovereignty and treaty-making power, they still have competence to agree on multiple issues without the EU's involvement.

A top-up tax can be agreed between the participating member states with different instruments. The most vague form of agreement is a political agreement stating that all the participating member states will implement a tax that tops up the EUA price. In contrast, an intergovernmental treaty that acknowledges the objectives as

[209] Gronendijk 2011. p. 5.
[210] Ibid. p. 5.
[211] Gronendijk 2011. p. 4. However, the Schengen Treaty was later incorporated in the EU's legal structure.
[212] Although this cooperation is not completely outside the EU's legislative framework, as they are using the EU's RES Directive cooperation mechanism.
[213] Convention on the stepping up of cross-border cooperation, particularly in combating terrorism, cross-border crime and illegal migration. Article 1.

a legally binding commitment is considered as hard law, similarly to national laws.[214] In between, there are different soft law instruments such as Memorandum of understandings, that have a varying legal status.[215]

6.5 Minimum auction price implemented via a treaty

As mentioned before, the competence for multiple member states to agree on a minimum price outside of the EU's legal framework is equal to a single member state's legislative competence to impose it unilaterally. As the analysis showed, the member states do not likely have the competence to impose a minimum price unilaterally, because the preconditions of Article 193 of the TFEU are not present. If member states presumed their competence and imposed a minimum price without the EU's involvement, the effects would be hard to predict and the disruption and uncertainty in the EUA market could lead to unpredictable consequences. Furthermore, the legality of these measures would most likely be challenged by the Eastern member states, which rely heavily on coal-powered electricity generation. The minimum price should only be implemented uniformly across the EU or, if there is not enough political support, via enhanced cooperation among willing countries.

However, if member states were to resort to this option, the requirements for a treaty of this sort are similar to those of the top-up tax, as described below.

6.6 Top-up tax implemented in the form of a treaty

Treaties form the core of international law. States have a myriad of treaties between each other in various contexts.[216] The effect of a treaty depends on the implementation, on the tradition how international law is applied in the state, and on how the signatory states enforce it. In the states applying the monistic theory of international law, a treaty does not need to be implemented in to national law. According to the dualist theory

[214] Ter Haar 2008. p. 237.

[215] This topic is debated in the literature and there is no consensus on the legal status of different soft law instruments. Some authors see that the only distinction that should be drawn is between political agreements and hard law, and each instrument can be put into one of these categories. See more Ter Haar 2008.

[216] Intergovernmental treaties vary from subjects of protecting Antarctica in the Antarctic Treaty to European cooperation in higher education in the Bologna Process. The UN publishes the United Nations Treaty Series based on Article 102 of the Charter of the United Nations "Every treaty and every international agreement entered into by any Member of the United Nations ... shall as soon as possible be registered with the Secretariat and published by it."

of international law, a treaty needs to be implemented in to national law before it is applicable.[217] Therefore, an individual in a dualist state cannot invoke a right based on The treaty in a national Court. It can only base its claim on the national law that is implemented accordingly with The treaty.[218]

Generally, treaties and aspects such as making treaties are governed by the Vienna Convention on the Law of Treaties. The treaty itself defines when it will be in force. Typically, treaties come into force by signature or the combination of signature and ratification.[219] The ratification process is not uniform and varies between states, for example by requiring a Parliamentary approval.[220]

There are no obstacles in international law that would prevent states from agreeing on a top-up tax with each other. Nonetheless, a couple of issues should be considered when drafting such a treaty. The design of the CPF treaty is crucial for the stability of the arrangement, especially if it is implemented outside the EU's legal framework. The treaty should contain provisions for withdrawal from The treaty. Normally, withdrawal from a treaty is possible, if the treaty has specific provisions governing that or if all members give their consent for the withdrawal.[221] For instance, Article 28 of the Paris Agreement imposes a requirement that the party can first notify its wish to withdraw from The treaty after three years have passed from the date The treaty entered into force. The withdrawal will be effective one year after the notification.[222] Including this mechanism would build up trust that the CPF will not be immediately annulled.

If a state wishing to withdraw -decides that it will no longer obey the agreement and decides to change the domestic tax law, there is little that other states can do. The likelihood of compliance can be increased with sanctions and dispute resolution mechanisms. However, including sanctions or dispute resolution mechanisms in the treaties is not a popular choice among states. The increased compliance that accompanies sanctions and dispute resolution mechanisms comes at the cost of the parties of the agreement, and dispute resolution does not benefit the winning state. Therefore, these mechanisms actually result in a net loss to the parties as a whole

[217] Finland is an example of a dualist country. The Constitution of Finland section 95.
[218] Hakapää 2010. p. 21-24.
[219] Vienna Convention on the Law of Treaties, Article 13 and 14.
[220] Article 94 of the Constitution of Finland requires parliament's approval for the president to ratify the agreement.
[221] Mulligan 2018. p. 4.
[222] United Nations Framework Convention on Climate Change, the Paris Agreement. Article 28.

and they are, in fact, better off without these mechanisms.[223] This can be avoided by imposing an obligation to pay monetary damages for treaty violations. A priori states have been reluctant to agree on damages, and most treaties do not contain the obligation to pay damages for a violation.[224] It is doubtful that EU member states agreeing on a regional CPF between each other would incorporate this kind of clause in The treaty. Some form of dispute resolution mechanism and compensation for violations might be beneficial for guaranteeing compliance. The best option for dispute resolution would be to incorporate an arbitration clause to avoid concerns relating to national Courts.

The Vienna Convention has rules that apply to a situation where The treaty has no provisions concerning the withdrawal from The treaty. Article 56 states that withdrawal is possible if: "(a)*it is established that the parties intended to admit the possibility of denunciation or withdrawal; or (b) a right of denunciation or withdrawal may be implied by the nature of The treaty. And A party shall give not less than twelve months' notice of its intention to denounce or withdraw from a treaty under paragraph 1.*"[225]

A treaty concerning the CPF would not likely cause disputes, since it would only involve domestic measures. A preferable option would be to resolve disagreements in arbitration by including an arbitration clause in The treaty Articles. Withdrawal is not an issue that necessarily needs to be included in the treaty unless the parties want to diverge from the default rule provided by the Vienna Convention.

6.7 Soft law agreement

There is not necessarily a need to govern the CPF with a treaty. It could be sufficient enough to politically agree on the measures each participating state will take and implement them in national legislation. In fact, the regional ETSs, the Western Climate Initiative and the Regional Greenhouse Gas Initiative in the US, are governed with memorandums of understanding (MoU). The MoU provides a model rule.

[223] Guzman analyzes international treaty making from a game theory perspective. See more Guzman 2005. p. 600.
[224] Bilateral investment treaties offer damages to foreign companies whose rights have been violated by the host state and some human rights treaties offer compensation for the victims. E.g. the International Covenant on Economic, Social and Cultural Rights, Article 9 (5) "Anyone who has been the victim of unlawful arrest or detention shall have an enforceable right to compensation."
[225] Vienna Convention on the Law of Treaties, Article 56, paragraphs 1: a, b, and 2.

The Western Climate Initiative is a linked North American cap-and-trade system. WCI Incorporated (Inc.) is a non-profit organization that provides administrative and technical support for the implementation of state and provincial ETSs. Furthermore, WCI, Inc. handles the joint auction proceedings.

At most, the WCI had 11 participating states; however, many of the member states withdrew and the WCI currently covers the US state of California and the Canadian provinces of Quebec and Ontario.[226] The remaining members of the WCI have linked their ETSs with each other.[227]

The Western Climate Initiative is governed by a decentralized model, which is construed of a non-binding agreement that, is then implemented in to the participating state's legislation.[228] The "model-rule" for the WCI is called the Design for the Western Climate Initiative Regional Program. This accord provides a model for the states that are willing to implement the ETS.[229]

The WCI's compatibility with the US and Canadian constitutions has been a controversial issue. The WCI involves only provinces and states, which have limited legislative power; furthermore, sub-national laws can be superseded by federal legislation. Fundamentally, the question of whether the WCI should be contemplated as hard law or soft law defines its constitutional acceptability both in Canada and in the US.[230] The structure of the WCI model-rule as a non-binding legislative "recommendation" and WCI, Inc. as an entity with no regulatory authority makes it hard to perceive as hard law.[231]

The RGGI started with seven states signing the Memorandum of Understanding in 2005.[232] The RGGI is governed by state-level regulation: each of the participating states enacts regulations following the Model Rule.

[226] Barker – Crawford-Brown, 2014. p. 277. See more Western Climate Initiative's website.
[227] Ontario has recently announced its intention to withdraw from the WCI. See more Forbes 2018.
[228] Kazazis 2018, p. 1180.
[229] Regardless of the fact that the accord specifically states that it is not intended as a model-rule, this is, in fact, the main purpose of it, as Alexander Kazazis points out. See more, Ibid. p. 1199.
[230] Soft law is associated with quasi-legal instruments that are either non-binding or less binding than e.g. laws enacted by sovereign states. Contrarily, hard law can be defined as binding legal instrument.
[231] Alexander Kazazis' extended analysis on whether WCI is compatible with the US Constitution's Compact Clause that precludes states from entering into any agreement with another state or with a foreign power, without the consent of congress, and whether the states had the power to enact this legislation in the first place. Ibid.
[232] The signing states included Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York and Vermont. The ETS has changed, with Maryland, Massachusetts and Rhode Island joining and New Jersey withdrawing. See Barker – Crawford-Brown, 2014. p. 274.

Amendments to the programme are done by updating and incorporating the changes to the renewed version of the Model Rule and then enforcing these changes in state legislation.[233] Each state has at its discretion the control of the supply of allowances equal to its share of the total number of allowances. States can decide the percentage of auctioned allowances and the allowances allocated for free in their Carbon Dioxide Budget Trading Program.[234] The RGGI is governed by the non-profit corporation Regional Greenhouse Gas Initiative Incorporated.[235]

The problem with the non-binding structure of the RGGI and the WCI is the stability. The states have at their discretion the ability to withdraw from the agreement, and this can cause a lot of uncertainty among the participating entities. For example, the RGGI lost a signatory member when New Jersey withdrew from the MoU in 2011.[236]

These structures utilized in America's ETSs provide useful examples of how to cooperate. The member states willing to implement a top-up tax could cooperate together by agreeing on model rules and creating a lightly structured organization that would coordinate and assess what the rate of the CPF should be for the coming years. However, as one can conclude from the RGGI and the WCI experiences, the stability of a non-binding soft law agreement is a real concern. As mentioned before, the concern relates to all treaties and, due to state sovereignty, cannot be fully solved. However, making The treaty binding indicates a higher level of commitment from the participating states and can make it less volatile to political changes. Nevertheless, it should be noted that the only method for ensuring stability and compatibility is to implement the CPF via EU institutions.

7 European Union's enhanced cooperation

7.1 Treaty on European Union Article 20

This chapter studies the ten conditions that derive from the Treaty on the Functioning of the European Union and the Treaty on European Union on the sub EU level legislative instrument called enhanced cooperation. The

[233] Barker – Crawford-Brown, 2014. p. 275.
[234] RGGI MOU. Section G.
[235] Note that the Western Climate Initiative has a similar structure.
[236] RGGI 2011.

rationale for studying this is the same as the motive of studying the possibility of using a treaty to implement the floor price, there might not be enough political support to implement such a reform at the EU-level.

The Amsterdam Treaty introduced a method called enhanced cooperation.[237] The enhanced cooperation rules were loosened in the Nice Treaty and further crystallized in the Lisbon Treaty. Hitherto, enhanced cooperation has been used in couple of areas, for example in the so-called "Rome 3 Regulation" concerning international divorce and in the European patent with unitary effect.[238] Article 20 of the TEU lays down the general framework for enhanced cooperation, which is concretized in Articles 326 to 334 of the TFEU. The ten conditions for enhanced cooperation in the context of a carbon price floor are explained below. Each headline assesses one condition and the chapter 7.12 concludes.

7.2 Minimum of nine member states participating

Article 20 (2) of the TEU requires that: "The decision authorising enhanced cooperation shall be adopted by the Council as a last resort, when it has established that the objectives of such cooperation cannot be attained within a reasonable period by the Union as a whole, and provided that at least nine Member states participate in it."

An in-depth analysis about whether the carbon price floor would get nine supporters is hard to make, but an initial idea of the current support can be drawn from the public statements member states have made. France is clearly in favour of the regional carbon price floor.[239] The Netherlands is already planning implementation of a national top-up tax by 2020.[240] Italy is planning a coal phase-out by 2025 and one of the options on how to implement this has been a carbon price floor.[241] Germany's position is a big question mark: Germany has confirmed a nuclear phase-out and is planning to simultaneously phase out coal.[242] It is still uncertain whether the coal phase-out will come in a form similar to the nuclear phase-out or through e.g. a carbon price floor.[243]

[237] Craig - De Burca 2011. p. 16.
[238] See more Peers 2010.
[239] See more ICTSD 2016.
[240] Dutch CPF 2018.
[241] EBC 2017.
[242] ICIS Germany's coal phase-out report.
[243] Germany has set a Commission to plan the coal phase-out. See more ICIS Germany's coal phase-out report.

Germany's participation is in many ways crucial since it is the largest economy, has the biggest share of votes in the EU and the largest GHG emissions. The United Kingdom already has a CPF, but its participation in the EU ETS and the EU as a whole is unclear and dependent on the negotiations around the withdrawal of the United Kingdom from the EU. The Nordic EU member states (Finland, Sweden and Denmark) plus the Nordic non-EU member states (Norway and Iceland) as well as Portugal, Spain and Austria might be willing to join the regional CPF.[244] Important aspect to note, is that the participation of non-EU member states is not included in the count of nine member states.

Other member states may be interested in joining the initiative, but since they have not publicly expressed their interest, a conclusion has to be drawn that currently there are not enough member states to back up a CPF through enhanced cooperation.

It is easy to argue that the CPF cannot be construed by the EU as a whole within a reasonable time, as reducing GHG emissions gets harder every day; and if action is delayed, the needed measures will become more and more expensive.

7.3 The area of cooperation must be outside the EU's exclusive competence

The EU ETS falls into the category of shared competence. Energy and environment are sectors mentioned in Article 4 of the TFEU's non-exhaustive list of areas that are in the shared competence. The recital of the EU ETS Directive shows the basis of the Directive: “Having regard to The treaty establishing the European Community (TEC), and in particular Article 175(1)” and “acting in accordance with the procedure laid down in Article 251 of The treaty”.[245] Article 175 of the TEC was Article that concerned environmental measures. Article 175 paragraph 1 references Article 174, which provides a list of activities that are within the Community’s discretion relating to the environment.[246] These activities include e.g. preserving, protecting and improving the quality of the environment and the prudent and rational utilization of natural resources.

[244] Lisbon declaration 2018. Leaders of Spain, France and Portugal stated that they together support a minimum carbon price. As the statement was meant as a high-level political comment, definitive conclusions on the positions of these countries cannot be drawn.
[245] Article 251 of the TEC corresponds with the Article 294 if the TFEU.
[246] In the TFEU, these Articles are 191 to 193.

In the case of carbon price floor, this entails that the rules are the same regardless of whether the carbon price floor would be considered to be a part of the EU's energy policy or whether it would be a part of environmental policy.

7.4 Objectives, interests and the integration process of the EU

The provision stating that the aim needs to be furthering the EU's objectives constitutes a requirement for the measure to be covered by a treaty area. Article 3 of the TEU lists the objectives of the EU as *"a high level of protection and improvement of the quality of the environment.*" This is spelled out more definitively in the TFEU Articles 191 to 193, which cover environmental protection and explicitly indicate that member states are allowed to take further measures in this area.[247] Therefore, the CPF should be in line with the EU's objectives. Furthermore, the same treaty article sets an obligation that the measure needs to protect the EU's interests and to reinforce the integration process. When the Commission was assessing the Rome 3 regulation -an already effectuated enhanced cooperation, it took an approach where in the absence of a consensus, at least some cooperation is better than no cooperation.[248] This indeed could be argued, especially regarding heavier carbon pricing, since from a climate protecting view, which is one of the EU's goals, there is no difference where the mitigation is done. The UK's carbon price floor has led to a 90 per cent reduction in coal-fired power production.[249] A regional CPF is more preferable option than a national CPF in terms of emission reductions and security of supply. A national carbon price floor would lead to lower domestic emissions over time, but higher overall emissions in the same region than a regional CPF.[250] It can furthermore be argued that the member states might not be willing to implement these measures unilaterally, and, without a regional agreement, the carbon price floor would not be adapted as widely.[251] Moreover, the ETS was implemented essentially on the same grounds as the CPF would likely be implemented.[252]

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[247] TFEU Article 193. *"The protective measures adopted pursuant to Article 192 shall not prevent any Member state from maintaining or introducing more stringent protective measures. Such measures must be compatible with the Treaties. They shall be notified to the Commission."*

[248] Rome 3, Recital 29. Council Regulation (EU) No 1259/2010
of 20 December 2010 implementing enhanced cooperation in the area of the law applicable to divorce and legal separation.

[249] Energypost 2018. Over 100 million tonnes of coal production has been shut down since 2013.

[250] Dutch CPF 2018.

[251] Due to the increasing number of interconnectors through the EU, the capacity to import electricity is increasing. Especially in central Europe, if two neighbouring states have a very different price on carbon, imports from the cheaper country will increase.

[252] TFEU Article 191.

It is clear that the carbon price floor is in line with the objectives set out in the treaties. It can be argued that the form of the carbon price floor is not of significant importance in terms of the purpose; both the top-up tax and the minimum auction price aim for the same objective: putting a higher and more stable price on GHG emissions.

It is unclear whether the regional carbon price floor would reinforce the integration process. The integration that happens under the auspices of EU framework is reinforcing integration at least more than alternative integration outside the EU framework.

7.5 Enhanced cooperation as a last resort

What does "*adopted as a last resort, when the Council has established that the objectives cannot be attained within a reasonable period by the EU as a whole*" entail for a carbon price floor?[253] The TFEU does not specify that there has to be a proposal on the subject, and it has been argued that this criterion would be fulfilled in cases where one or more member states are explicitly against the measure.[254] In the case of the Rome 3 Regulation, the Commission published a Green Paper that included conflict of law rules and jurisdiction rules in international marriages. Many member states disapproved these rules and it was clear that the proposal would not reach unanimity.[255] The Council officially acknowledged that it was impossible to reach an agreement within a reasonable time.[256]

In the first challenge against the unitary patent in the ECJ, Italy and Spain argued that the discussion was not sufficient enough to be regarded as a "last resort".[257] Claimants stated that the language arrangements had not been discussed thoroughly and that there was a real chance of compromise if negotiations would have continued. Although, Italy acknowledged the fact that the Council has a broad discretion in determining whether the negotiations are completed and there is certainty that the enhanced cooperation is adopted as a last resort.[258] The Court's response to the plea was that since the proposal for an EU-wide unitary patent has been

[253] TEU Article 20.
[254] Peers 2010. p. 348.
[255] Ibid. p. 346. And Commission Rome 3 2010.
[256] Cantore 2011. p. 11.
[257] TEU Article 20.
[258] ECJ patent 2013.

around from the year 2000 and the proposal was discussed with every member state, the Council's decision is right. Furthermore, the Court argued that the Council is in the best position to define whether the condition of "last resort" is fulfilled.[259]

If the carbon price floor would be adopted as a top-up tax, it is subject to unanimity in the Council, since it is, as argued supra, a provision primarily of a fiscal nature, mentioned in Article 192 of the TFEU. Unanimity is not likely to be achieved; hence certain member states are strongly opposed to this measure. For example, Poland and Greece are planning to increase their coal production, and a tax on the carbon content of fuel would contradict this aim by making electricity generation with coal a less attractive investment. Polish representatives have publicly talked negatively about the carbon price floor.[260] It is not clear whether these statements opposing a carbon price floor will be sufficient for the enhanced cooperation to be considered a "last resort". The condition requiring that objectives cannot be attained within a reasonable period by the EU as a whole is closely linked to the last resort. However, there is a slight difference. It can be said that negative statements form a barrier to the achievement of these objectives within a reasonable period, but it still does not mean that it is necessarily a "last resort". As seen from the previously implemented enhanced cooperation legislation, there needs to be at least some form of discussion about the topic. In the earlier schemes there have been official discussions around the implementation of the scheme on the whole of the EU or the proposals have failed to get the required majority. Regarding the CPF, the European Commission proposed a Community-wide carbon tax in 1992. The proposed carbon tax somewhat resembled what the CPF would eventually look like, if it were to be implemented like the UK model. However, this tax on the carbon content of fuel used in electricity generation would have served a different purpose as the main instrument of the EU's climate policy. The minimum price, however, would be an integral part complementing the ETS. Therefore, it cannot be said that the same proposal as the CPF has been discussed Union-wide. If there is to be a legislative initiative on a regional CPF, the participating member states should note that in order to be certain that the proposal passes the criterion of last resort, the discussion of a Union-wide CPF should be held first. This is not, however, an

[259] ECJ patent 2013. Point 53: *" The Council, in taking that final decision, is best placed to determine whether the Member states have demonstrated any willingness to compromise and are in a position to put forward proposals capable of leading to the adoption of legislation for the Union as a whole in the foreseeable future."*

[260] The Polish deputy minister for energy stated: "It is easy for France to talk about a carbon price floor, Poland could just as easily consider introducing a nuclear price floor." In Berlin Energy Transition Dialogue, 17 of April 2018. The situation in Greece is peculiar in the EU context, hence its economy is largely controlled by European Troika.

unconditional requirement for the proposal to pass. The Commission may deem the requirement fulfilled even with the current level of discussions.

Price management measures such as a minimum price for the auctions, were considered in the Commission's report in 2012, which was followed by a public consultation. The stakeholders' attitudes towards discretionary price management measures were mainly negative. This kind of examination is certainly far from being adopted as a last resort.[261]

7.6 Participation is open to all willing member states at any time

Joining the enhanced cooperation later should not create any difficulties, because a tax can be easily implemented unilaterally. If the CPF is combined with the cancellation of allowances, there needs to be coordination with that.

This requirement should not create a barrier to the minimum price in the auctions either. A higher share of allowances simply would be auctioned with a minimum price. If the regional minimum price is compatible with other requirements, its implementation should not depend on the market conditions, such as the proportion of allowances with a minimum price.

7.7 The cooperation shall comply with EU treaties and laws

The Lisbon Treaty embodied the principle of subsidiarity and the principle of proportionality into primary legislation. The core idea of the subsidiarity principle is that EU should only exercise its legislative powers when the goal can be better achieved at the EU level. According to principle of proportionality, the content and form of the EU's action shall not exceed what is necessary to achieve the objectives of the EU's treaties.[262] It is clear that the EU's aim to cut GHG emissions by 80 to 95 per cent requires more stringent measures by the member

[261] European carbon market 2012.
[262] Craig - De Burca 2011. p. 95.

states. The CPF is in accordance with the principle of subsidiarity; hence it is better to regulate it EU-wide or at least regionally rather than solely by member states.[263]

Furthermore, compliance with EU treaties and laws should not present a problem, if the CPF were to be implemented in a manner similar to the UK's national CPF. Hence compatibility with the EU legislation has not raised any concerns, and the Commission has approved the UK's state aid measure related to the CPF. Moreover, there are currently no Union-wide harmonized taxes covering the carbon content of fuel used for electricity generation.

Whether the regional minimum price would be compatible with the treaties largely depends on the implementation of the price floor. The analysis for the compatibility under enhanced cooperation is similar to the analysis for the application of Article 193. A definitive answer cannot be given, but the minimum price is more likely to be compatible with the treaties if it is not accompanied by restrictions to the movement of the allowances. As mentioned supra, the requirement to purchase allowances solely from the auctions of certain member states could be in breach of the free movement of goods or free movement of capital, depending how EUA is defined.[264] On the other hand, restrictions are required in order to prevent the minimum price from affecting the non-participating member states. If the flow of EUAs is left uncoordinated, the demand for allowances auctioned without a minimum price will spike. As the ECJ stated in the Polish MSR plea, the measure's compatibility is to be studied against the actual effect of the measure.[265]

The minimum price is not likely compatible with the treaties, as it directly affects the market conditions in all of the member states.

7.8 Internal market or economic, social and territorial cohesion

The cooperation shall not undermine the internal market or economic, social and territorial cohesion. It shall not constitute a barrier to or discrimination in trade between member states, nor shall it distort competition

[263] The electricity markets in Europe are interconnected and regulation changes in one member state therefore have some effect in other states.
[264] The EUA has been defined differently depending on the context. For example it has been seen as a commodity in the spot market and as financial instrument in the futures market. See more Bennet 2010. p. 1592.
[265] ECJ MSR 2018.

between them. The top-up tax would have a direct effect on the electricity generators operating in the participating country. The price of non-renewable energy would increase in these countries. The effect on non-participating countries would not be as straightforward. They could still sell their electricity to the participating state's markets and, in fact, their non-renewable electricity would actually be more competitive, because it would not be subject to the tax. Consequently, the top-up tax should be compatible with the requirements concerning the internal market. The top-up tax would certainly increase electricity prices in the participating member states. The requirement relating to economic, social and territorial cohesion would depend on the details of the legislation and requires a further study on the abovementioned impacts.

Regarding the regional minimum price, problems rise when it is only implemented in some member states. The implementation depends on the possible restrictions to the free movement of allowances. It is vital to note the fact that the effect is distinctly different depending on which member states participate in it. The participation of Germany, especially, is crucial, as its economy is still largely powered by lignite and hard coal, and as it is the largest market in the EU. Electricity production in Germany has a large impact on the EUA price.[266]

7.9 The competences, rights and obligations of non-participating member states

The regional top-up tax does not constitute any barriers to the internal market and, actually, it only enhances the competitive standpoint of non-participating countries, at least in the short term. It is a different equation if the CPF would be accompanied by an allowance cancellation measure. The introduction of a CPF would increase the price of fossil-fuel powered electricity, which would lead to a reduction in demand. The reduced demand for high carbon content electricity leads to a reduced demand for EUAs. If the number of allowances is not reduced correspondingly, there will be excess supply that will drag the EUA price down. If the participating member states do adjust the supply by cancelling a corresponding amount of allowances that the CPF is reducing the demand for, the overall cap of the EU ETS will be tightened by more than what was agreed at the EU level. If the supply is reduced by the correct amount, it should not have any impact on the EUA price. As neither the price of an allowance or the rules of free allocation would be affected by the top-up tax in non-participating MSs, it would not create a major change to the status quo. The size of the EUA market would be scaled down.

[266] In 2017, 37 per cent of Germany's electricity was produced by hard coal and lignite. See more ICIS Germany's coal phase-out report.

The regional top-up tax is hard to be viewed as violating competences, rights or obligations. Affecting the energy market does not necessarily entail affecting the rights, competences or obligations of member states. However, affecting the energy market could affect these conditions if it changes *"the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply."*[267] Regarding the minimum price, the same concerns arise again, and the effect depends largely on how it is implemented and which member states take part in it. The legality of the measure cannot depend on market conditions. As the regional minimum price generally can have a disproportionate effect on other MSs the answer should be restrictive.

7.10 Participating member states' request to the Commission

The participating member states need to submit their proposal to the Commission, which may propose it to the Council. The treaty does not explain what "may" means in this context. This wording leaves substantial amount of consideration for the Commission. In fact, the Commission did not respond to the proposed enhanced cooperation on the Rome 3 Regulation for almost two years and only after the new Commission was appointed was the proposal submitted to the Council.[268] The Commission has not refused to submit an enhanced cooperation proposal yet, and what the grounds for refusal are remains to be seen.

7.11 Participating member states' unanimous decision in the Council and European Parliament's consent

After the Commission has submitted the proposal to the Council and the Parliament has given its consent, the final decision can be made in the Council. The decision is made by participating member states; however, non-participating states can participate in the discussions without having a vote.[269]

[267] Article 194, TFEU.
[268] Cantore 2011. p. 11.
[269] An interesting comparison can be made between the EU enhanced cooperation and the WTO framework of preferential trade agreements (PTA). Non-participating states are not allowed to participate in the decision making of PTAs. See more Cantore 2011. p. 17.

The Parliament's consent is governed by the Rules of Procedure of the European Parliament, according to Rule 99 (4) *"Parliament shall decide on the proposed act by means of a single vote on consent."*

The decision making in the Council is done according to the procedure laid out in Article 329 and 330. Only participating Member states can take part in the vote. Furthermore, the article defines the contextual meaning of unanimity and qualified majority. However, there is no specification about when the unanimity requirement is applicable. The only explicitly mentioned application of the unanimity requirement is regarding the framework of the common foreign and security policy. The article does not answer the question of would a measure requiring unanimity when it is implemented EU-wide require unanimity when it is implanted via enhanced cooperation. By negation, one can infer that since unanimity is explicitly mentioned only in relation to common foreign and security policy, voting by qualified majority will be utilized in other procedures.[270] This question does not have significant practical importance, since it can be assumed that the countries participating in the enhanced cooperation will vote in favour of it in the Council, and, because only participating member states have the right to vote, the decisions should be accepted unanimously by custom.

7.12 Viability of enhanced cooperation

As the analysis above shows, the feasibility of a regional carbon price floor implemented via enhanced cooperation is uncertain. The regional minimum price would have a greater impact on the overall EUA market and non-participating member states than a regional top-up tax would have. Therefore, it is less likely to be feasible. The fact that both the Commission and the EP have to give their approval for enhanced cooperation creates uncertainty. As the inherent nature of these institutions is to promote supranational interests and to promote EU integration as a whole, it is not self-evident that they will be keen on promoting enhanced cooperation.[271] However, from an institutional point of view, it would be better to integrate deeper within The treaty framework and preserve the role of the EU institutions, rather than agree outside The treaty boundaries.

[270] It is possible to draw the contrary conclusion as well. Since using special legislative procedure is required when the EU is legislating EU-wide policy, it will be required for enhanced cooperation as well.
[271] Avbelj 2013. p. 207.

D Concluding remarks

9 Conclusions

To limit global warming to well below 2 degrees Celsius or even further to 1.5 degrees Celsius, the ambition level of GHG mitigation must be significantly raised. There are various ways to reach the targets. A recent IPCC report showed that limiting the warming to 1.5 means that global GHG emissions need to be net-zero in 2050, which most likely requires negative emissions by, for example, removing carbon dioxide from the air or flue gases. Relying on negative emissions is not advisable since the viability of these technologies on a large scale is uncertain. Practically every nation needs to increase its ambition to be compatible with the Paris Agreement. This applies to the EU as well. As a climate policy forerunner, the EU should take the lead and set a target of reaching net-zero emissions by 2050. Many member states recognize this and try to push for a more ambitious climate policy nationally and within the EU framework.

The continued low price in the EU ETS during 2008-2017 has raised calls for additional strengthening of the system by adjusting the existing ETS parameters or by using discretionary price management mechanisms like a carbon price floor. A carbon price floor could, in principle, be implemented either as a top-up tax or as an auction reserve price.

In the EU context, law cannot often be distinguished from political context. In EU, law is closely linked to the politics, these two are especially close as the Euro crisis proves, even the founding treaties bend if the political will is strong enough. The close relation of law and politics actualizes in less extreme way e.g. when the correct legislative process is assessed in the EU and terms such as "a significant impact on the Member states' energy choices between different energy sources" are interpreted. Phrases such as the above mentioned are open for interpretation and policy arguments. Therefore, the legal procedure is not detached from the underlying political situation and interpretation ultimately requires some value choices.

Some form of a carbon price floor is already in place in a few other ETSs. This thesis analysed the UK's model of tax topping up the EUA price and California's model providing a minimum price in the auctions. The EU has a shared competence with the member states in the areas of energy and environment based on Article 4 of the

TFEU. From a judicial perspective, the most interesting question regarding the implementation of a carbon price floor is what legislative procedure is to be applied. The TFEU Article 192 (2) requires a unanimous decision in the Council for provisions primarily of a fiscal nature and measures significantly affecting a member state's choice between different energy sources and the general structure of its energy supply. The top-up tax is clearly a fiscal measure, which requires unanimity in the Council. Reaching unanimity on an issue as sensitive as higher GHG emission pricing is currently unthinkable. For member states relying heavily on coal-based electricity generation, a higher price on GHG emissions is unacceptable. In the event that unanimity would be reached, the top-up tax would require a totally new Directive or a new regulation in the EU, as it is explicitly outside the scope of ETS Directive and the Auctioning Regulation.

The first research question was, what is the correct legislative procedure for implementing an EU-wide carbon price floor? Defining the correct procedure for the WCI's and the RGGI's auction reserve price, which acts as a minimum price in the auctions, is more complicated. Finding the correct legal procedure requires analysing the significance of the impact that it has on the member state's ability to choose between different energy sources and an analysis on whether it constitutes a primarily fiscal measure. Previous EU case law shows that there is a high threshold for the impact to be considered as significant. In the MSR case the ECJ interpreted the MSR as a necessary reform for the market to function properly and therefore not as exceeding the threshold for significance. The ECJ's case regarding the inclusion of aviation and the challenge of the legislative basis of California's ETS both confirm that the ETS does not constitute a tax. As shown in previous case law, there is a strong argument that the minimum price can be implemented in ordinary legislative procedure implicating a decision by a qualified majority in the EC. The minimum price could be implemented as an EU-wide instrument by amending the ETS Directive and the Auctioning Regulation. If the EU were to choose this option and implement a minimum price via qualified majority decision, it would likely be challenged in the ECJ. Ultimately, the correct procedure will depend on how the ECJ interprets the TFEU Article 192 in the possible judicial review.

Concerns about the unanimity requirement in the Council have raised proposals of a regional carbon price floor. In an interconnected market a regional carbon price floor would be more effective than a national CPF for phasing out coal and it might prevent imports of fossil fuel-powered electricity from neighbouring states. If the carbon price floor were implemented only in countries that are in favour of the CPF, it could be implemented regardless of opposition from certain other member states.

The proposals on a carbon price floor by a few member states and related background analyses and studies have so far dealt mostly with technical and economic aspects and their impact on the power and carbon markets. However, they have lacked substantiality on the governance and legal form of the regional CPF. This thesis analysed both implementing the CPF outside of the EU legal framework and implementing it within the EU using enhanced cooperation provided in the TEU Article 20.

The second research question was, can the carbon price floor be implemented regionally and what are the boundaries from EU legislation's perspective? The member states would certainly be able to agree on the UK-model top-up tax outside the EU legislative framework. A Carbon price support rate is possible among two or more member states, as taxation affects only domestic entities. An agreement between member states on the top-up tax would most likely be an MoU. Using an MoU does not provide any guarantee that the other parties will comply with the agreement nor does it guarantee longer-term predictability of the arrangement. Even if the member states would use a traditional hard law treaty, withdrawing from the arrangement would not be difficult. The stability of the arrangement is hard to guarantee outside of the EU legislative framework.

The third research question was, can the carbon price floor be implemented by using enhanced cooperation? The viability of a regional top-up tax is uncertain, if it is implemented via enhanced cooperation. Enhanced cooperation requires a minimum of nine member states. Currently only France is explicitly supporting a regional carbon price floor, the UK has its own national CPF, and the Netherlands is planning to introduce a similar national instrument. There is no clarity on the position of the other member states. It is unclear when the requirement that enhanced cooperation is adopted as a last resort is fulfilled. As there have been no official proposals on adopting a CPF at the EU-level the requirement for enhanced cooperation to be adopted as a last resort is certainly not fulfilled yet. The fact that both the Commission and the European Parliament have to give their approval for the enhanced cooperation creates ambiguity. As the inherent nature of these institutions is to promote supranational interests and to promote EU integration as a whole, it is not self-evident that they will be keen on supporting enhanced cooperation. However, from an institutional point of view, it would make sense to integrate deeper within the treaty framework and, consequently, preserve the role of the EU institutions. The enhanced cooperation has been utilized only a few times and the ECJ has laid down the criteria for assessing only some of the requirements. A safe guess is that a lot depends on the Commission's attitude

towards the proposal: if it favours the idea it is more likely to find the proposal compatible with the requirements and submit the proposal to the EP and the EC.

The regional minimum price cannot be implemented in the EU legislative framework or via an intergovernmental agreement. Auction reserve price cannot be implemented regionally, as the EU has harmonized auctioning rules and an auction reserve price would hamper the internal market and affect the free movement of goods and the free movement of capital. A single member state imposing a higher price on its share of auctioned allowances would affect the market and be in contradiction with the harmonizing aim of the auctioning regulation and the ETS Directive. This measure would directly increase the average allowance price. To avoid the higher prices in non-participating member states, the movement of allowances would have to be restricted; this measure would contradict the aims of ETS legislation as well by fragmenting the market.

Interesting topics for further research would be the top-up tax's compatibility with the national constitutions and its compatibility with the Energy Charter Treaty or investment treaties in general. These considerations are more likely relevant, if the CPF were implemented as a tax. As showed in this study, the top-up tax is an instrument outside the existing legislative framework and therefore it might revoke the application of these requirements, whereas the minimum price would be a modification of an already existing system and therefore it is less prone to national constitution restrictions or to infringe on an investment treaty.

The state aid aspect should be addressed, if new environmental state aid guidelines change the rules for providing state aid. Under current rules, the UK state aid for the increased electricity cost caused by the CPF is approved by the Commission. The UK's state aid for the CPF is approved by the same rules as the state aid for the EUA price. Furthermore, because the minimum price would be an integral part of the EUA price, the state aid issue does not need to be considered separately.

The carbon price floor is possible, but is it desirable? This is not self-evident. The EU ETS has already witnessed how overlapping policies can ruin the proper functioning of the ETS. The Energy Efficiency Directive, the RES Directive and national measures have reduced the demand for EUAs, creating an oversupply. The introduction of the CPF might cause a similar waterbed effect whereby the introduction of one policy instrument makes another instrument less effective. To avoid this, the preferable option for increasing the price level would be to change the LRF and forget discretionary price management measures. The tightened cap combined with the MSR would create more scarcity and hike-up the price. The CPF is not the most desirable option, since it is

accompanied by legal uncertainties, it may cause a waterbed effect, and is not as cost-efficient as a fully market-based system. If policymakers were to resort to CPF, an EU-wide minimum price would be least distortive from a market point of view and, administratively, the easiest option. Generally, regional instruments should be avoided.