AALBORG UNIVERSITET

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Emission Allowance Trading Following the Adoption of MiFID II

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Abstract (resumé)

Dette kandidatspeciale omhandler kvote-handel efter adoptionen af MiFID II.

Med udgangspunkt i drivhusgasser, og realisationen af hvordan de påvirker klimaet, tager specialet fat i Kyoto Protokollen, hvor kvoter og kreditter bliver taget i brug som instrumenter for reducering af udledningen af drivhusgasser.

Som en følge af EU's forpligtelse ved tiltrædelsen af Kyoto Protokollen, blev EU ETS oprettet, hvor handel med kvoter bliver brugt som instrument og incitament til at reducere udledning af drivhusgasser i EU. Specialet vil kigge på hvordan udviklingen i EU ETS har været, og hvordan EU ETS har påvirket de aktører der er opstået i forbindelse med udviklingen af EU ETS. Der vil bl.a. blive analyseret, diskuteret og konkluderet på erfaringer omkring kvote handel i praksis.

Efter introduktionen af EU ETS, og de efterfølgende handelsfaser, har der været en kraftig stigningen i handlen med kvoter. Den øgede handelsaktivitet samt erfaring med en stigende mængde svigagtige aktiviteter i forbindelse med kvotehandel har gjort, at man fandt det nødvendigt at regulere handlen med kvoter.

For at regulere kvotehandelen, valgte man fuldt ud at inkludere kvoter som finansielt instrument på lige fod med aktier, obligationer, valuta osv. På denne måde blev kvoter omfattet af handelsreglerne i MiFID, hvorfor man forventer mere kontrol med kvotehandelen. Dette er både en måde at overvåge tilstanden på kvotemarkedet på, men også en måde at modarbejde de svigagtige aktiviteter, der har været registreret.

Specialet vil bearbejde dette, ved at kigge nærmere på direktiver omkring EU ETS og MiFID, samt de forarbejder der er til disse direktiver. Der vil blive inddraget arbejdsdokumenter og udfaldsvurderinger. Disse skal bruges til at vise hensigten med de forskellige direktiver, og vurdere hvordan udfaldet af inkluderingen af kvoter som finansielt instrument vil blive.

Der er lavet en nærmere analyse af udfaldet på handel med finansielle instrumenter efter adopteringen af MiFID. Dette skal bruges til, at reflektere de erfaringer der er gjort med handel med finansielle instrumenter over på handel med kvoter.

Hensigten med at adoptere MiFID var, at skabe mere klarhed og kontrol på det finansielle marked. Dette skete kun delvist, da manglende erfaringer samt finansiel ustabilitet omkring årene efter MiFIDs indførelse. De mangler der blev erfaret fandtes i MiFID, er blevet forsøgt udbedret i MiFID II.

Med indførelsen af kvoter som et finansielt instrument, tilsigtedes der at skabe samme klarhed og kontrol på kvotemarkedet, som var tilsigtet med det finansielle marked generelt. Da der er visse ligheder mellem markederne for kvoter og andre finansielle instrumenter, formodes det, at der kan drages paralleller, og derfor drage nytte af erfaringerne fra handel med finansielle instrumenter på kvotehandel.

Med udgangspunkt i erfaringerne fra handel med finansielle instrumenter, forventes der at komme betydelig mere klarhed og kontrol med kvotehandelen ved MiFID II's ikrafttrædelse i 2017. Samtidig må det dog forventes, at der kommer en (betydelig) stigning i udgifter forbundet med kvotehandel. Dette skyldes de ekstra foranstaltninger og forpligtigelser, der er påkrævet ifølge reglerne i MiFID II.

Slutteligt må det dog konstateres, at den egentlig hensigt med kvoter, reducering i udledning af drivhusgasser, forventes at blive positivt hjulpet af MiFID II. Det er dog endnu usikkert, hvordan handlen i praksis vil blive påvirket af adoptionen af MiFID II.

1. Intend of thesis

This thesis will identify, discuss and evaluate the changes being brought to emission allowances trading in the EU following the adoption of the updates rules for Markets in Financial Instruments Directive (MiFID II).

By acceding the Kyoto Protocol, the EU have committed to reduce carbon emissions. By reducing the annually allowed emission, there have been a significant growth in emission allowance trading, due to companies trying to cover their emission allowance needs and companies wanting to sell off any spare emission allowances they might have. The increased activity on the market for emission allowances, are a result of:

- Trading of spare EUA's (European Union Allowances – allowances in European Union Emissions Trading Scheme)
- Increased generation of CER (Certified Emission Reduction – credits generated by Cleaner Development Mechanisms under the Kyoto Protocol)

With the adoption of the updated rules of the Markets in Financial Instruments Directive, emission quotas are now being considered a financial instrument. The need for including emission allowances in MiFID as a financial instrument, was a result of "a range of fraudulent practices have occurred in spot secondary markets in emission allowances (EUA) which could undermine trust in the emissions trading scheme, set up by Directive 2003/87/EC… to reinforce the integrity and safeguard the efficient function of those markets… it is appropriate to complement measures taken under Directive 2003/87/EC by bringing emission allowances fully into the scope of this Directive".[1]

Since emission allowances previously have not been regarded as a financial instrument under MiFID, the effect on the trading of emission allowances is uncertain. Emission allowance trading have previously primarily been regulated by the Kyoto Protocol and the EU ETS and the rules and regulations established by energy exchanges holding climate credits and allowances within their portfolio of tradable commodities. Bringing emission allowances into the scope of MiFID brings uncertainty to the trading of emission allowance as a result of emission allowances not previously being regarded as a financial instrument.

To process this, the following questions are being raises:

- What legislative changes are being brought to emission allowance trading in the EU by the adoption of MiFID II?
- How will this affect emission quota trading?

[1] Source: Directive 2014/65/EU, recitals paragraph 11

1.2 Methodology

The thesis will answer the question of MiFID II's effect on emission allowances trading, by looking at the development of emission allowances, and how the handling of emission allowances have evolved since they were introduces by the Kyoto Protocol. Regulations regarding emission allowances have evolved since they were first introduces, and to gain a perspective of where they are heading, it's important to look at how they have evolved, as a way of predicting, in what direction emission allowances are heading.

It is important to have a rudimental understanding of greenhouse gases, so as to understand to thoughts leading to, and reasoning behind, the introduction of emission allowances. Since the focus in the thesis is on emission allowances, and not greenhouse gases, the thesis will only discuss greenhouse gases in general terms. Greenhouse gases are however the basis of emission allowances, making it important to have a rudimentary understanding of greenhouse gases and how they are a part of the climate-change challenge[2].

To gain a further grasp of emission allowances, the thesis will look into the history of emission allowances, starting with the Kyoto Protocol, followed by the EU Emission Trading Scheme. The focus in the thesis will be on the European market for emission allowance trading, due to the rules of Markets on Financial Instruments Directive applying to countries of the European Union as well as Iceland, Norway and Liechtenstein. Since the Directive only applies to this market, the focus will be on the EU Emission Trading Scheme (EU ETS), and not any other trading scheme there otherwise might be in place in connection to the Kyoto Protocol.

The thesis will use the same terminology and definition as used in the treaties and directives being analysed in this thesis. As a result, the terminology and definitions in regards to emission allowances and greenhouse gases, will use those listed and used in the Kyoto Protocol and EU ETS respectively. Concerning terminology and definitions in regards to trading of emission allowances, the thesis will use those listed and used in the Markets on Financial Instruments Directive. The thesis will use these terms and definitions as a way of making the connection between thesis and underlying legislation the thesis has its roots in.

The thesis will focus on the EU ETS, but the thesis will briefly involve the Kyoto Protocol, due to the Kyoto Protocol being the basis and the reason behind the EU ETS. As a result thereof, parts of the Kyoto Protocol is being reiterated in the EU ETS. Therefore it is deemed important for the process of the thesis to involve the Kyoto Protocol, and not only the EU ETS. The thesis briefly outline the Kyoto Protocol followed by more detailed examination of the EU ETS. The EU ETS will have a higher weight than the Kyoto Protocol in the thesis, since the EU ETS is directly connected to MiFID, as well as being a way of the EU to comply with its commitment to emission reduction by the accession of the Kyoto Protocol.

When discussing the MiFID, the thesis will split into two parts. The first part is to outline the original directive (Directive 2004/39/EC), which created a single market for investment services and activities in the EU. The second part will focus on the adoption of Directive 2014/65/EU, which repeals Directive 2004/39/EC, and introduces MiFID II. By way of MiFID II, emission allowances are now considered a financial instrument. Until the adoption of Directive 2014/65/EU, emission allowances had only partially been regulated by MiFID rules, due to MiFID rules of Directive 2004/39/EC applying to *derivatives*[3], having emission allowances partially being derived thereof.

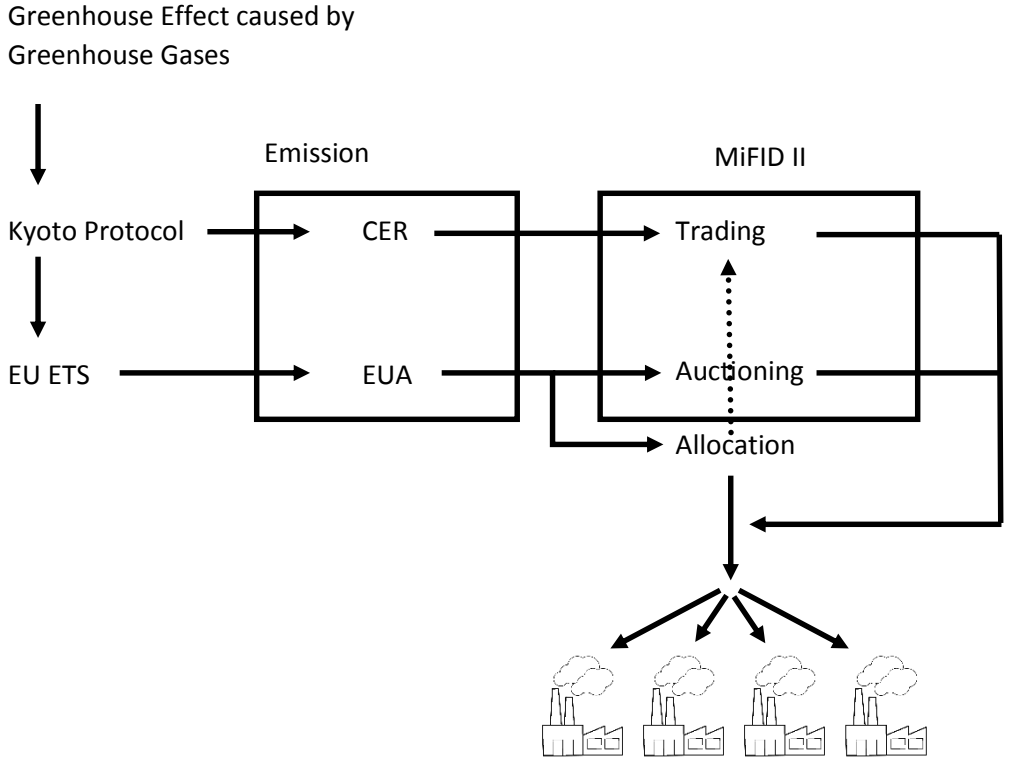
[2] Professor John P. Holdren notes in his speech at the Eighth Annual John H. Chafee Memorial Lecture on Science and the Environment, what most people refers to as "global warming" is rather to be considered a "global climatic disruption", due to how the climate have changes. As a result it is being referred to as a "climate-change challenge".
[3] Derivative – A financial instrument, such as futures contracts or options, the price of which is largely determined by the commodity, currency, share price, interest rate, etc., to which it is linked

The thesis will only focus on the areas of MiFID II where “emission allowances” have been added, and will not look at other changes there might have been made by the adoption of the updates rules. This decision was made due to how extensive the MiFID rules are, as well as the extent of the updates rules. The focus in the thesis is on emission allowances and to discuss the updates MiFID rules as a whole, will be too extensive to comply with the intent of the thesis.

Looking at MiFID and MiFID II separately, is meant to be a way of distinguishing what areas of MiFID is going to include emission allowances when Directive 2014/65/EU comes into effect. In furtherance hereof, distinguishing MiFID and MiFID II allows the thesis to look at how MiFID have affected the Single Market. This is going to be used as a basis of making an educated guess, as to how MiFID II will affect emission allowance trading. As a way of looking at the impact MiFID has had on the financial market, the thesis will include the report “Impact of MiFID on equity secondary markets functioning” written by the CESR. This report may be considered being outdated due to it being written in 2009. Furthermore the report was written just over a year after MiFID came into effect. However, the reports now available are dealing with MiFID II and its prospect, limiting the availability of more recent reports, papers etc. dealing with MiFID. Furthermore, this report thoroughly analyses the impact of MiFID and brings up educated estimates of future expectation for MiFID.

Throughout the process of writing this thesis, it became clearer and clearer how extensive the regulations concerning the EU ETS and MiFID are. Furthermore these two areas of legislation appear, on the surface, incoherent. Upon further study however, these two areas of legislation do coincide. Being two extensive areas of legislation, not immediately appear to coincide, caused some struggles throughout the process of writing the thesis, due to lack of coherence progress throughout – a vast amount of information had to be gathered, and absorbed, before being able to analyse the problem.

The following figure is a way of illustrating the connection between emission allowances and MiFID II:



Emission reduction set out in the Kyoto Protocol are quantified by way of allowances. The European Union have created the EU ETS to meet its commitment according to the Kyoto Protocol. To meet commitments according to the Kyoto Protocol, emission allowances are put in place. These are being allocated, auctioned and traded. As a way of regulating this, emission allowances are being considered financial instrument, thus bringing them under the scope of MiFID II.

When dealing with impact assessment regarding emission allowance trading, the majority of impact assessments to be found concerns other financial instruments than emission allowances. Therefore this thesis will look into the expected impact on other financial instruments, then reflects these assessments onto emission allowances.

Throughout the process of the thesis, it has become evident, that emission allowances being only recently (with the adoption of MiFID II) regarded as a financial instrument, there a few, if any, workings on how emission allowances will be affected by the changes. Thus this thesis will reflect emission allowances from what they are compared to; financial instruments.

2. Greenhouse Gases

Greenhouse gases are what generate the greenhouse effect. The greenhouse effect is the natural occurring phenomenon where the suns heat is being radiated back out from the earth's surface and then captured and by a layer of gases in the earth's atmosphere.[4] Various gases occur naturally and stacks in the earth's atmosphere. These natural occurring gases are:

- **Hydrogen Oxide (H_2O (water))** - occurs as part of the hydrological cycle; water (H_2O) circulating through evaporation and transpiration, condensation and precipitation.
- **Carbon Dioxide (CO_2)** – naturally released when plants and animals decompose
- **Methane (CH_4)** – created by bacteria feeding on organic material in areas lacking oxygen (occurs during mining, livestock husbandry, rice cultivation and from landfills)
- **Nitrous Oxide (N_2O)** – is released naturally from oceans, rainforests and by bacteria in soils.

As part of the industrial revolution, the amount gases released into the atmosphere increased rapidly due to manmade activities. The largest contributor hereto is Carbon Dioxide (as a result of burning fossil fuels). Furthermore, non-natural occurring gases are being released as part of industrial activities. These are:

- **Hydrofluorocarbons (HFCs)** – used in cooling and refrigeration
- **Sulphur hexafluoride (SF_6)** – used in electronics industry
- **Perfluorocarbons (PFCs)** – emitted during manufacturing of aluminium and used in electronics industry
- **Chlorofluorocarbons (CBCs)** – refrigerants, propellants and solvents

The 7 greenhouse gases have different heat trapping capabilities. As an example, fluorinated gases only accounts for 1,5 per cent of greenhouse gases, but can trap heat up to 22.000 times more effectively than CO_2.[5] As a way of comparing these various greenhouse gases, they are being converted into CO_2-equivalents. This is done by calculating how much of a certain gas have to be emitted to create the same greenhouse effect as one metric tonne of CO_2.[6]

The exponential increase in greenhouse gas concentration in the Earth's atmosphere, have shown a large impact on the climate, by increasing the average global temperature by 0,85°C since 1880. The rise in average global temperature is expected to continue. The changes caused by the increased concentration of greenhouse gases trapped in the Earth's atmosphere, are expected to persist for centuries, even if emissions are stopped.[7]

The link between emission of greenhouse gases, control hereof and emissions trading is to be found within the framework of climate change law and policy at international-, EU- and national level. This is seen by the adoption of the United Nations Framework Convention on Climate Change (UNFCC) by the Intergovernmental Negotiating Committee in 1992 at the Earth Summit in Rio. This came into force in 1994. In 1995 it was realised, that the UNFCC was insufficient to tackle the climate-change challenges. This resulted in the adoption of the Kyoto Protocol two years later.[8]

[4] Source: European Commission, greenhouse effects
[5] Source: European Commission, Understanding greenhouse gases
[6] For conversion chart see Annex I
[7] Source: UNFCCC, Feeling the Heat: Climate Science and the Basis of the Convention
[8] Source: UNFCCC, Background on the UNFCCC

2.1 Kyoto Protocol

The Kyoto Protocol was adopted September 11th 1997 in Kyoto, Japan. Annex A of the Protocol lists certain sectors/sources, where the emission regulation might apply - energy, industrial processes, agriculture and waste. Each sector has subcategories, although not being considered a complete list, allowing the directive some flexibility.

Annex B in the Kyoto Agreement set down various emissions limitation or reduction commitments for each nation supporting the Agreement. Looking at the quantified commitments, it shows the countries in the EU have committed as a whole and acting jointly; acting jointly is an option in the Kyoto Agreement.

The overall target for the agreement was an average reduction of 5 per cent in emission from 1990 levels. The various commitments ranged from 8 per cent reduction in the EU, to an increase in emission by up to 10 per cent in Iceland. These commitments were split into two periods; 2008-2012 and 2013-2020. The second period (2013-2020), and the emission reduction numbers for this period, came into effect following the Doha Amendment in 2012.

The Kyoto Protocol includes three flexible mechanisms that provide for generation of Certified Emission Reductions (result of CDM projects – Kyoto Protocol Article 12), Emission Reduction Units (result of Joint Implementation Projects that do not form part of 2. Kyoto period from 2013-2020 (Kyoto Protocol, Article 6), and Assigned Amount Units, which the tradable unit in International Emissions Trading (Kyoto Protocol, Article 17). These units are meant as a way of keeping track of emissions as well as quantifying emission reduction projects.

2.1.1 Doha Amendment to the Kyoto Protocol

With the Doha Amendment to the Kyoto Protocol, the commitment period was increased by 8 years, to last throughout 2020. Furthermore, the committed countries had their target emission limitation or reduction adjusted. This meant the EU now committed to reduce emission by 20 per cent by 2020 compared to 1990 emission levels.

2.2 Tradable Commodities under the Kyoto Protocol

Article 6, paragraphs 12 through 17 provides the option of trading various emission units under the Kyoto Agreement. Paragraph 12 introduces Certified Emission Reduction (CER) – CERs being the focus in this thesis, inasmuch as this unit is tradable on energy exchanges and is usable in the EU ETS.

ERUs and CERs can be earned when participating in projects abroad. These emission credits are earned, as a result of reducing emissions that, if not for the project, would otherwise have taken place. CERs and AAUs (Assigned Amount Units) represents one metric ton of CO_2-equivelant.[9]

There are generally speaking 2 ways of controlling emissions:

- Baseline and credit
- Cap and trade

[9] Source: Freestone, p. 159

Baseline and Credit

This system have a government establishing a baseline for emission allowances, and allocate these as it see fit. When recipients of these emission allowances manage to operate under their baseline, they are allowed to sell off any excess emission allowances they might have. This system is often seen as flawed, as it runs the risk of having insufficient allowances to cover the markets.[10]

Cap and Trade

In *cap and trade* the government allocates tradable allowances instead of setting a baseline as is the case for *baseline and credit*. At the end of each period for which the allowances are issued, the company must surrender the amount of allowances required to cover its emission. Since the company have emission allowances allocated at the beginning of a period, and won't have to surrender the required amount until the end of a period, it provides the option of trading its allowances early, and buy back later. By the end of the period, the company will need to surrender the sufficient amount of allowances to cover its emission, and will have to buy from the marked if the allocated allowances are insufficient.[11]

2.2.1 AAU (Assigned Amount Units)

Each party subject to the Kyoto Protocol have a certain assigned amount of emission they are allowed to emit to achieve the overall goal of the Kyoto Protocol; reduction of emissions by 5 percent from 1990 levels. By the end of each commitment period, the party may not exceed its Assigned Amount, and must surrender its emission rights, as to aggregate the emission during the period.[12]

2.2.4 CER (Certified Emission Reduction)

Certified Emission Reduction units are accrued as part of Clean Development Mechanism. The Clean Development Mechanism (CDM) is defined in article 12 of the Kyoto Agreement.

CDM is meant as a way of helping Parties in Annex I of the Kyoto Protocol to achieve compliance with their quantified emission limitation and reduction commitment under Article 3. This is done by creating projects assisting Parties not listed in Annex I, to reduce their emission. Such projects can be carried out by public as well as private actors. In addition to accruing CERs, CDMs are seen as a way of financing emission reduction in countries not yet committed to the emission reduction under the Kyoto Protocol.[13]

Article 12, paragraph 5 lists 5 provisions needed to be satisfied to accrue CERs.

a) Voluntary participation approved by each Party involved
b) Real, measurable, and long-term benefits related to the mitigation of climate change
c) Reduction in emission that are additional to any that would occur in the absence of the certified project activity

Any CER accrued by Parties listed in Annex I as a result of such project, may use these CERs to contribute to the compliance with their quantified emission limitation and reduction commitment.

[10] Source: Freestone, p. 62
[11] Source: Freestone, p. 62
[12] Source: Freestone, p. 158
[13] Source: Freestone, p. 14

It is the Conference of the Parties (COP)[14] who decided if a designed project is to be approved, generating CER(s) as a result. Furthermore the Conference of the Parties are obligated to "elaborate modalities and procedures to ensure transparency, efficiency and accountability through independent auditing and verification of project activities". It is therefore the Conference of the Parties who is the overall governing body of the CDM.[15]

The increased focus on consequences of emissions, have forced the international community to take step to limit and reduce such emissions. Conferences focusing on climate change are more frequent, and with the Doha amendment to the Kyoto Protocol, it shows that the international community seeks to further detail and tighten the grip on emission of greenhouse gases.

As a result of these steps taken however, a whole new segment appears: trading of emission units. This in turn creates a whole new set of issues as well as opportunities which, the international community have to deal with at either international level or national level, depending on the extent of these issues and/or opportunities. In furtherance hereof exchanges and registries have been established, or already existing entities have been extended, to accommodate. Since the EU as an entity adopted the Kyoto Protocol, it had to create a system managing emissions at Union level to ensure each Member State complied with the acceded emission reductions according to the Kyoto Protocol. As a result, the European Union Emissions Trading Scheme was established.

[14] Conference of the Parties is the supreme decision-making body of the United Nations Framework Convention on Climate Change. All States that are Parties to the Convention are represented at the Conference of the Parties. (Source: UNFCCC)

[15] Source: Kyoto Protocol, Article 12

3. EU ETS (Emission Trading Scheme)

The first steps were to assign a certain amount of units for each year, complying with the emission limits set out in the Kyoto Protocol. Subsequently these units were distributed between Member States, who in turn were to allocate their assigned units to companies needing emission allowances.

Directive 2003/87/EC directly states in its Article 1 that "This Directive establishes a scheme for greenhouse gas emission allowance trading within the Community (hereinafter referred to as the "Community scheme") in order to promote reductions of greenhouse gas emission in a cost-effective and economically efficient manner".

In the recital of the Directive; item 30, it is assessed, the States individually would not be able to sufficiently achieve the objective of the Directive. The objective of the Directive is assessed to be better achieved, by handling the matter at a Community level, resulting in the adoption of the Directive. Despite this, the EU were to be seen as decentralised. The EU ETS set out rules, procedures, and guidelines as well as allowing the European Commission to review the Member States. Carrying out the policies in the EU ETS were up to the individual Member State. Based on this, Members States set up their own schemes, though inter-linking these, creating a larger collective. After the adoption of the Directive, there have been observed a tendency to move towards a more centralised system. The increase in centralisation is partly due to the need of making sure, all sectors are treated equally across the Union, thus avoiding favouritism.[16]

Following the adoption of Directive 2003/87/EC in 2003, the EU ETS was launched in 2005, the EU ETS was split into 4 trading periods:

1. **2005-2007** Known as the "learning by doing" period, the first trading periods was the initial trading period, and was meant as an introductory period.
2. **2008-2012** Iceland, Norway and Liechtenstein joins the EU ETS.
3. **2013-2020** Cap on emissions - reducing the allocated EUAs by 1,74 per cent a year
4. **2021-2028**

As of October 2013 the allocation of emission allowances, which will be described in point 3.1.1, covers roughly 45 per cent of the emissions in the EU.[17]

In Annex I of the Directive, the categories of activities covered by the Directive are listed. Each subject (companies) covered by the activities listed in Annex I of the Directive are obligated to participate in the EU ETS. With a limited set amount of emission allowances, companies are left with 3 options as a way of covering their emission allowance needs:

- Invest in more efficient technology and/or a shift to energy sources emitting less greenhouse gases
- Purchase extra quotas or credit
- A combination of the first two option

Previously emission allowances have been allocated for free. But as of 2013 most of the allowances are being allocated by way of auctioning. The goal is to completely phase out free allocation by 2027, relying solely on auctioning as a way of allocating emission allowances – this is rooted in the notion that polluters should pay.

[16] Source: Freestone, p. 343-344
[17] Source: European Commission, Factsheet

The EU ETS define an allowance as "allowance to emit one tonne of carbon dioxide equivalent". Since the EU ETS covers several more greenhouse gases than CO_2, it defines "tonne of carbon dioxide equivalent" as the equivalent global-warming potential as one tonne of CO_2. Any of the greenhouse gases listed in Annex II of the Directive, are therefore to have its global-warming potential calculated, so that the emitted gas equals one tonne of CO_2. This allows for the EU ETS to only use one unit of measure: European Union Allowances (EUAs).[18]

As part of the EU ETS, roughly 2.1 billion allowances are issued each year. Based on the committed emission reduction compared to 1990 figures, the reduction of allocated allowances is currently set at just over 38 million annually; 1,74 per cent. From 2021 to 2030, the reduction number will increase to 2,2 per cent a year.

Up until 2012, EUAs where directly converted from any given AAU a Member State were holding. As of 2012 AAUs are shadowing the movement of EUAs. Having these two entities shadowing each other, is meant as a way of efficiently operate the EU ETS while accommodating the commitment to the Kyoto Protocol.[19]

With the adoption of Directive 2004/101/EC (Linking Directive), certain emission credits were allowed to be acquired by operators under the EU ETS. The credits allowed, are credit generated as part of CDM and JI projects, i.e. CERs and ERUs. This was done as a way of supplementing EUAs, and create a more competitive market, making the compliance with the Kyoto Protocol more cost-effective. In regards to Phase II, certain limits were established as to how many credit were allowed to supplement EUAs. In Phase II this limit was set at an average of 11,4 per cent across Member States. In addition to this quantitative limitation, qualitative limitations were established as well, not allowing credits generated as part of certain activities. Examples hereof are credits generated from nuclear facilities and hydro projects exceeding 20 MW, as well as credits generated as part of LULUCF[20]. The quantitative limitations were set in place, due to concerns that Member States and operators would focus their emission reduction efforts to third countries, rather than within the Union. Since the adoption of the Linking Directive however, there has been a shift in attitude towards emission credits, and a more laid back approach to emission credits are seen, with an increased use as a result.[21]

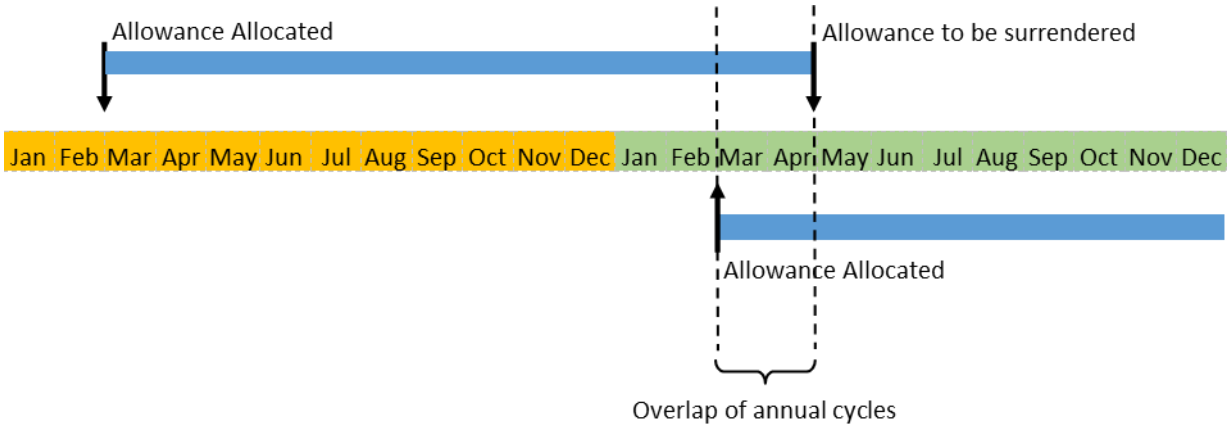
The EU ETS is an evolving entity, and new measures are taken frequently to ensure the efficiency of the Trading Scheme. With more and more allowances being allocated by auction instead of free allocation, a more active financial aspect of emission allowances are likely to be seen.

[18] Source: Directive 2003/87/EC, article 3
[19] Source: Freestone, p. 360
[20] Land Use, or Land Use Change, Forestry
[21] Source: Freestone, p. 361-363

3.1 EU ETS Annual Cycle

EUAs are issued once a year, but are valid for the entirety of the trading period in which they have been issued. EUAs can be held by any legal person, who are registered in a national emission registry. In April each year, operators are to surrender EUA(s) equivalent to the amount of emitted greenhouse gases from the preceding calendar year.[22]

With EUAs being valid for an entire trading period, yet issued every year, there is seen a flexibility of the EUA market. The EU ETS Directive allows banking and borrowing of EUAs within each trading period. By this, operators are allowed to *bank* any excess units to following years in the same trading period, or in cases of shortage of EUAs (due to excessive greenhouse gas emission), the operator may *borrow* EUAs from the subsequent year. This is possible, since EUAs are issued 28th February each year, but won't have to be surrendered until 30th April the following year. To illustrate this, see the following figure.



Example: EUAs for 2014 are issued 28th February – EUAs to be surrendered for 2013 greenhouse gas emissions are to be surrendered no later than 30th April 2014; leaving a gab where the connecting years overlap.

It is to be noted, that *banking* and *borrowing* across trading periods is prohibited.[23]

If an operator does not surrender sufficient amounts of EUAs to cover its emission, it is subject to fines with set rates for each tonne of emitted greenhouse gas not matches to a EUA. In addition to the fine(s), the operator must still surrender those exceeded EUAs the following calendar year.[24]

3.1.1 Allocation

The EU ETS works on the *cap and trade* principle. With the adoption of Directive 2009/29/EC, national allocation plans where replaces by a common EU allocation plan.

Each Member State must develop an allocation plan for each trading period, stating the amount of EUAs to be allocated in each trading period as well as how these are to be distributed between operators. In insertion to this, Member State must keep a reserve of EUAs, to be distributed to new operators. Allocation of EUAs are to adhere to Annex II of the Directive.[25]

[22] Source: Freestone, p. 349
[23] Source: Freestone, p. 349-350
[24] Source: Freestone, p. 358-359
[25] Source: Freestone, p. 353

Prior to 2004, there were only limited data available to estimate the EUA need of each Member State. As a result, the EUAs allocated for Phase I were allocated by "benefit of doubt", resulting in an excessive allocation, thus leaving the market flooded with a surplus of EUAs. As of Phase II, allocations were stricter, limiting the allocated amount of EUAs. Despite stricter rules regarding allocations, a downturn in the European industry resulted in less greenhouse gas emissions, with a continued excess of EUA as a result. The struggles the EU ETS have seen by excess EUAs, due to faulty national allocation plans, lead to an amendment to the EU ETS, and made EUA allocation centralised and controlled at EU-level. This took off in 2013.[26]

There are two ways of allocating EUAs:

- Free allocation
- Auctioning

From the offset of the EU ETS, free allocation was the only way of allocating. By free allocation, Member States are allocating their emission units free of charge, based on their allocation plan. By auctioning, emission units are allocated by way of auctioning; i.e. distributed to the highest bidder. During Phase I and II, Member States were allowed to auction off allowances. Only few Member States chose to do this, and only auctioned off a limited amount. In 2013 the goal were to have auctioneering covering 20 per cent of allowances, and 70 per cent by the end of Phase III. The final goal is to reach 100 per cent allocation by 2027. The EU encourages Member States to use proceeds from auctioning to reduce greenhouse gas emission, renewable energy, energy efficiency, forestry, public transportation or adaption.[27]

The Commission and 24 Member States appointed the European Energy Exchange (EEX) as a transitional common auctioning platform.[28]

The complexity and difficulties of cooperating when dealing with allocating emission allowances are shown by this move from national allocation plans to a centralised allocation plan. Furthermore experience has shown the difficulty of estimating the needed amount of emission allowances according to regulations set out, as well as conditions out of the administration's control. However, the annual cycle, with overlap between cycles, have left opportunities for trading and speculation to take place.

[26] Source: Freestone, p. 535-356
[27] Source: Freestone, p. 356-257
[28] Source: European Commission, Climate Action, Auctioning

3.2 Market Players

When looking at the EU ETS, there are certain main players to consider. These main players are the ones involved in the actual trading and participating in the EU ETS, and who the majority of legislation is directed at – various authorities are not to be considered market players.

3.2.1 Trading Venues

When talking trading platforms for emission allowance trading under MiFID, there are four platforms to consider:

- Regulated Market – multilateral system operated and/or managed by a market operator bringing together third-parties buying and selling according to Title III of Directive 2014/65/EU
- Multilateral Trading Facility (MFT) – operated by an investment firm or a market operator, bringing together third-parties buying and selling according to Title II of Directive 2014/65/EU
- Organised Trading Facility (OTF) – multilateral system not being a Regulated Market or MTF
- Exchanges

As exchanges are the most common trading venue, only this venue will be discussed in further detail.

3.2.1.1 Exchanges

An exchange is an electronic platform that matches buyers and sellers. Exchanges offer quick executions and can provide transparency to the market as well as your own trades[29]. When looking at the EU ETS, there are considered to be three major exchanges.[30]

When setting up the system for emission allowance trading, exchanges already dealing in various energy commodities is taken into consideration, thus being familiar with emission allowances, and are likely to manage emission allowance trading as well.

As an example of an exchange dealing in emission allowances is the European Energy Exchange (EEX). EEX is doing clearing as well as settle financial and physical trading transactions. EEX is dealing in primary and secondary market, including futures, thus granting access to the EU ETS as well as Kyoto Credits (CER, ERU).[31]

3.2.2 Compliance Buyers

Compliance buyers are the market participants who are emitting greenhouse gasses, thus being the reason behind establishing the EU ETS – compliance buyers are generally speaking companies required by compliance under Directive 2003/87/EC to surrender emission allowances per emitted metric tonne of CO_2.

Compliance buyers are therefore persons, legal or natural, who are seeking to obtain emission allowances to meet their obligations. The term "compliance *buy*" is used, since the majority seek to buy emission allowances. However, instances where these companies possess more emission allowances than they need to comply with the obligations under Directive 2003/87/EC, they may seek to sell off any excess allowances.

[29] Source: Freestone, p. 325-329
[30] ´Source: European Commission, Commission Staff Working Paper Impact Assessment
[31] Source: European Energy Exchange, At the Centre of European Energy Trading (factsheet)

3.2.3 Market Intermediaries

Instead of compliance buyers dealing on own account, they can choose to use a market intermediary. These intermediaries will then by and/or sell emission allowances as needed on your behalf. Furthermore, some intermediaries will do portfolio management as well, managing your emission allowance needs – due to the overlap between annual cycles, this may sometime be an advantage.

These markets intermediaries often deal in other energy commodities or derivatives as well, and will therefore have a keen knowledge of the energy market, and might have an advantage when managing emission allowance needs; though of course requiring a fee for such services. As a result of already being on the energy market, they might not be subject to the same authorisation fees as new participants might, thus not being affected by authorisations fees to the same extent as new market participants.

An example of such market intermediary could be NEAS Energy[32].

3.3 Emission Allowance Trading In Practice

When trading emission allowances in the EU, there are 3 options as a way of trading:

- Over-the-counter (OTC) – an accountholder trade directly with another accountholder
- Exchanges – buy or sell allowances and credits on exchanges, as well as partake in auctions
- Use brokers/intermediaries

All 3 options require the trader to have an account with the EU ETS Registry before being allowed to trade.

3.3.1 Registries

Registries were established in connection to the adoption of Directive 2003/87/EC. As a result the EU ETS Registry, operated by the European Commission, were established. Furthermore national registries were established as well (in Denmark it's the Danish Emission Trading Registry – operated by the Danish Business Authority).

Up until 2009 the EU ETS Registry and national registries were operated parallel, but as of 2009 all European registries were centralized under the EU ETS Registry. [33] [34]

Generally speaking, all legal and natural persons are allowed to have an account with the registry, as long as they provide the required documentation and pay various fees as needed. Once these requirements are met, one of following 3 accounts are available at the registry

- Holding accounts
- Trading accounts
- Verifier accounts

[32] "NEAS Energy is an independent energy asset management company. They provide physical and financial optimization of renewable and conventional assets operating on energy markets in Europe."

[33] Executive Order on the EU ETS Registry and the Danish Emission Trading Registry – based on EU Regulation 389/2013/EU

[34] Denmark still operate the Danish Emission Allowance Registry, but now a way for the Danish government to keep track of its emission reduction in according to the committed amount following the adoption of the Kyoto Protocol.

Holding and trading accounts are both allowed to hold units. Verifier accounts are solely used for verifying greenhouse gasses related to operator holding accounts. Due to the focus in this thesis being on trading regulation, accounts will not be discussed any further.

Before being allowed to make trades, you are required to have either a holding account or a trading account. These account may hold emission allowance (EUA) or carbon credits (ERU's, AAU's, RMU's and CER's – CER's being the most common).

	EU ETS Registry					The Danish Emission Trading Registry
Types of account	Holding account			Trading account		Personal holding account
	Operator holding account	Aircraft operator holding account	Personal holding account			
Transaction For more check: "Carrying out transactions" and "Trusted accounts"	Is executed by the list og trusted accounts			1) Is executed by the list og trusted accounts	2) To other accounts with approval from additional authorized representative	Transactions is executed by the list og trusted accounts
Transaction delay For more check: "Transaction delay"	26 hours as a starting point			1) 26 hours as a starting point	26 hours as a starting point	26 hours as a starting point
				2) No delay with an approval from an additional authorized		

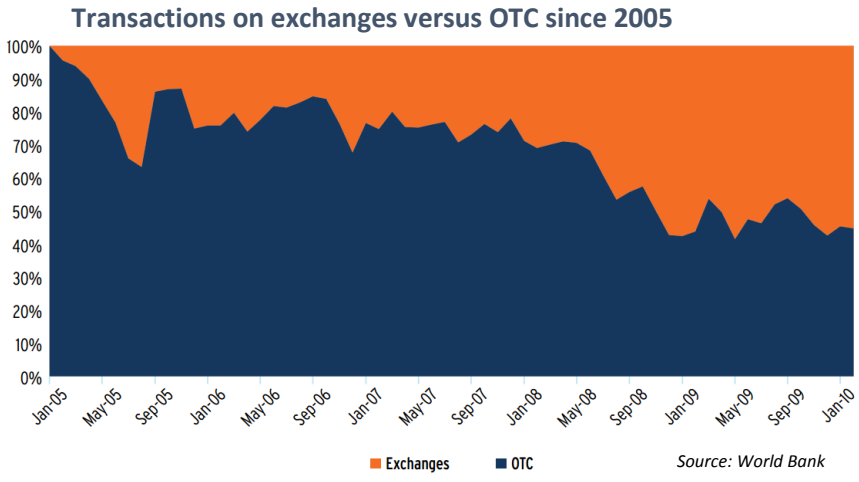
http://danishbusinessauthority.dk/types_of_account , 11th November 2014

For a further comparison between accounts, please see the above figure.

3.3.2 Exchanges

Exchanges are to be considered third parties, when looking at emission allowances as a way of reducing emission. These exchanges operate nationally as well as internationally, but are set apart from intergovernmental and governmental authorities, and operate on the free market. As an example of some of these exchanges are ICE (InterContinental Exchange), EEX (European Energy Exchange) and NasdaqOMX Commodities. These however, are only a few of the numerous exchanges managing emission allowances. Furthermore, these exchanges operate on an international level, and does not only focus on the European market.

In addition to managing trades, exchanges are carrying out auctioning of emission allowances as well. As already mentioned, auctioning of emission allowances are to be the sole way of allocating emission allowances by 2027, and as a result, exchanges are likely to see a significant growth in emission allowance trading activity. The trend of moving from free allocation to auctioning, is already showing.



3.3.3 Trading

Once a legal or natural person have an account with either the EU ETS Registry or the Danish Emission Trading registry, this person may freely trade the units allowed in account on the concerned registry. The trading is only restricted, by limiting the accountholder to only trade the amount of units there is in his account; thus not transferring more units than he possess.

The only requirement for trading to take place, is the need of assigning an Authorized Representative (AR) and/or Additional Authorized Representative (AAR).

3.3.4 Auctioning On Exchanges

In extension to Directive 2003/87/EC, Regulation No 1031/2010 (the "Auctioning Regulation") was adopted. This Regulation deals with auctioning of emission allowances established in Directive 2003/87/EC.

Before you are eligible to take part in auctions on any exchange, you are required to have a holding account with either the EU ETS Registry or a national registry, for example the Danish Emission Trading Registry. Though legal as well as natural people are eligible to have a holding account at various registries, Article 18 in the Regulation prohibits eligible traders to legal people; operators bidding on their own account, investment firms, credit institutions, business grouping and public bodies/state-owned entities of the Member States – all of which are legal persons. Natural persons can bid by way of being clients of one of aforementioned legal persons, but are exempt from bidding themselves.

3.3.4.1 Monitoring

Concerning various monitoring connected to auctioning of emission allowances, the Regulation only discusses monitoring in following circumstances

- Auctioneers and the conduct of auctioneers as well as other employees at the exchange connected to auctions.
- Ensuring data on bidders are up to date, and these are still compliant with the requirements needed to be accepted to be a bidder.
- Notification of money laundering, terrorist financing or criminal activity
- Market abuse

Some of these items requires national agencies to monitor and some require the auctioning platform to monitor, and in certain circumstances the appointed auction monitor is required to do the actual monitoring, whereas in others the national agencies and auction platforms are to monitor and then report to the auction monitor.

Thus is appears there is no streamlined monitoring procedure set in place; different authorities are overlooking certain aspects of what might widely be considered various stages of the same process regarding emission allowance trading. Furthermore most of the monitoring set out in the Regulation concerns monitoring prior to obtaining an account – once an account is granted, the level of monitoring appear to lessen. The requirements for monitoring is discussed in broad terms, and is generally speaking instruct auction platforms to be "on lookout" for money laundering, terrorist financing, criminal activity or signs of market abuse. Article 55 states auction platforms *may* be hold liable for infringements, but leave all monitoring measures to the auction platforms themselves.

This monitoring only concerns auctions, as Regulation No 10/31/2010 only concerns auctions. When it comes to monitoring of trades, there seem to be little or no regulation once a person, legal or natural, have obtained an account at a registry.

4. MiFID (Markets in Financial Instruments Directive)

Directive 2004/39/EC on Markets in Financial Instruments Directive, known as MiFID, replaced Directive 92/22/EEC (Investment Services Directive; ISD). It was adopted to create a single market for investment services and activities.[35]

The Directive was meant as a way of protecting investors in financial instruments. Annex I, section C in the Directive lists what is considered financial instruments when operating under MiFID.[36]

There were seen a rise in the amount of trading in financial instruments, as well as a wider range of activities on the market. The EU being a Single Market, there were a need of new regulation(s) replacing the previous Directive (93/22/EEC). Directive 2004/39/EC was seen as a way of protecting investors across the Single Market of the Community. In addition to protecting investors, there appeared to be a need of including "commodity derivatives and others which are constituted and traded in such manner as to give rise to regulatory issues comparable to traditional financial instruments".[37]

As a way of pinpointing the intent of MiFID, two points in the recitals of the Directive is deemed relevant for quoting in full:

(5) "It is necessary to establish a comprehensive regulatory regime governing the execution of transactions in financial instruments irrespective of the trading methods used to conclude those transactions so as to ensure a high quality of execution of investor transactions and to uphold the integrity and overall efficiency of the financial system"

(7) "The purpose of this directive is to cover undertaking the regular occupation or business of which is to provide investment services and/or perform investment activities on a professional basis. Its scope should therefore not cover any person with a different professional activity"

In continuation of this, and to summarise, the aim is to protect investors and ensure a smooth operation of the market. This is, amongst other things, to be achieved by creating transparency of the market.

The Directive is directed at natural as well as legal persons. Paragraphs 10 through 16 list a range of persons, who are excluded from the scope of the Directive. Paragraph 17 establishes a standard, making persons covered by the Directive subject to authorisation. Once an authorisation is obtained, it is valid across the Community, and the one authorisation is sufficient if a person wishes to perform its services and/or activities and another Member State. As a result, technical and legal restrictions to access the regulated markets, should be removed.[38]

MiFID applies to investment firms, regulated markets and to some extent credit institutions. It only applies to credit institutions, when these institutions are providing services and/or activities corresponding with articles listed in article 1, paragraph 2 of the Directive. Article 2 and 3 of the Directive lists exemption to whom the Directive applies, but will not be discussed further in this thesis.

[35] Source: European Commission

[36] 1. Transferable securities, 2. Money-market instruments, 3. Units in collective investment undertakings, 4-7. Options, futures, swaps, forward rate agreements, 8. Derivative instruments for the transfer of credit risk, 9. Financial contracts for difference.

[37] Source: Directive 2004/39/EC

[38] Source: Directive 2004/39/EC

4.1 Composition of MiFID

To make the Directive more approachable, it's been split into 5 titles. Each of the titles have their own chapters, classifying the various parts of the Directive. The following chapter of the thesis, will discuss the chapters of MiFID in further details, though only focusing on the chapters relevant in regards to the focus and intent of this thesis.

4.1.1 Conditions and Procedures for Authorisation

First and foremost: persons engaging in investment services or activities are subject to authorisation. This authorisation is to be granted by the home Member State's competent authority. Article 48 in the Directive established the requirements making authorities competent to grant authorisation. In continuation hereof, each Member State must keep a list of all authorised persons, and all authorisations are to be notified to the European Securities and Marks Authority (ESMA)[39]. If a competent authority withdraws its authorisations, this must be kept on record for a period of 5 years.

Authorisation may only be granted, if the application for authorisation fully satisfies the requirements under the provisions adopted pursuant to the Directive. Information needed to satisfy these requirements, are to be supplied by the applicant. As a way of harmonisation across the Community, ESMA may set forth draft regulatory technical standards. The authorisations may be withdrawn, if there has been made no use of the authorisation for 12 months, or if any of the reason in article 8, litra b-e may apply. As part of this authorisation, the people directing the firms operating under MiFID, must be sufficiently reputed and experienced to ensure the management of the firms. If information regarding the person(s) directing the business is wrong, or at a later date changes, the authorisation may be withdrawn.

Article 13 establishes organisational requirements for the firms operating under MiFID. In general terms, the requirements demands the firms to setup procedures to ensure safe operating of all relevant aspect of their business, as well as keeping proper records of their services and transactions, and keep record of funds they may be holding.

Lastly, article 15 set up procedures as to how Member States are to act, if firms encounters any difficulties when trying to trade with third countries or trying to establish themselves in third countries.[40]

4.1.2 Operating Conditions for Investment Firms

Following authorisation, investment firms are still obliged to comply with the requirements needed for the initial authorisation. To ensure this, the competent authority in each Member State must establish a way monitoring firms having received authorisation. In connection to this, ESMA may develop guidelines regarding this monitoring. Member States are to ensure firms are identifying potential conflicts of interest.[41]

Article 19 instructs investment firms to act honestly, fairly and professionally. Paragraphs 2 to 8 lists a range of situations where this applies. As part hereof, investment firms are required to obtain information from, as well as provide sufficient information to, its clients, and ensuring proper and sufficient knowledge to make decisions regarding the investment portfolio. Furthermore the investment firm is required to keep records relevant of trades and agreements which have taken place, as well as having these available to the clients.

[39] ESMA is an independent EU Authority that contributes to safeguarding the stability of the European Union's financial system by ensuring the integrity, transparency, efficiency and orderly functioning of securities markets, as well as enhancing investor protection. (Source: http://www.esma.europa.eu/page/esma-short)
[40] Source: Directive 2004/39/EC, articles 5-15
[41] Source: Directive 2004/39/EC, articles 16-24

The investment firm is required to ensure the best possible result for their clients. This concerns, amongst other things, the need to implement effective arrangements to ensure the best possible price, costs, speed etc., as well as keeping records of these and monitor the results. Investment firms are to obtain consent from their clients if trading are to be done outside a regulated market or a MTF[42].[43]

4.1.3 Market Transparency and Integrity

To prevent insider dealings and market manipulation/abuse, Member States are to coordinate measures with ESMA to monitor the activities of investment firms. In connection hereof, investment firms must keep records of all transactions for at least 5 years. This is to ensure the investment firms act "honestly, fairly and professionally and in a manner which promotes the integrity of the market".[44]

When investment firms make transactions, they are to report to the competent authority as soon as possible, and no later than the close of the following working day. This is regardless of whether the investment firms are handling reporting themselves, or are having third parties or reporting systems submitting the reports. If a reporting system is used, this reporting systems must be approved by the competent authority.

Investment firms and market operators operating an MTF must monitor their systems to ensure no breach of rules, disorderly trading conditions or conducts are taking place. If an investment firm or market operator discovered one of these, they must immediately report to the competent authority and supply all relevant information for future investigations.

Investment firms and market operators are required to make public any bid and offer prices prior to any trade, as well as make public the price, volume and time of the transaction. These publications are to be made as close to real-time as possible.[45]

4.1.4 Rights of Investment Firms

Once authorisations has been granted, investment firms are free to operate within the territory from which they have received authorisation. If the investment firm wishes to expand its operations to another Member State, it needs to provide information hereof to the competent authority in its home Member State. Member States are directed to grant authorisation to any investment firm or market operators operating MTFs, who have already received authorisation in another Member State. Proof of authorisation in the home Member State is required. The same rules apply to any firms or operators wishing to establish a branch in another Member State. Information regarding authorisation is to be provided by competent authorities and home and host Member States respectively.[46]

[42] Multilateral Trading Facility (MTF) is a multilateral system operated by an investment firm or market operator, which brings together multiple third-party buying and selling interests in financial instruments – in the system in accordance with non-discretionary rules. (Source: Directive 2004/39/EC, Article 4, paragraph 15)
[43] Source: Directive 2004/39/EC, articles 21-24
[44] Source: Directive 2004/39/EC, article 25
[45] Source: Directive 2004/39/EC, articles 25-33
[46] Source: Directive 2004/39/EC, articles 34-35

4.1.5 Competent Authorities

It is the duty of each Member State to designate the competent authority. Once a competent authority has been designated, it is to be reported to the Commissions, ESMA and competent authorities in other Member States. If any tasks are delegated to other entities, this is to be reported as well. ESMA must keep and publish an up-to-date list of the competent authorities.

More than one authority in each Member State is permitted, but close cooperation between these authorities is required, and must have their respective roles clearly defined.

These authorities are to be given powers to supervise and investigate, so they can carry out their functions. Article 50 in the directive lists a range ways for the authorities to exercise their powers.

By way of administrative sanctions, steps may be taken when provisions adopted by MiFID have not been complied with. These measures are to be effective, proportionate and dissuasive. Unless these measures might jeopardise the financial markets or cause disproportionate damage to the parties involves, the measures are to be made public. ESMA is to be informed of any measures taken. Member States have to ensure any measures taken may be applied to the courts of the Member State.[47]

4.1.6 Summarising Composition of MiFID

Overall MiFID is establishing a strict regulation controlling the financial market. This it does by imposing extensive procedures and obligations onto persons subject to the Directive, including requiring various authorisations, establishing requirements for monitoring and establishes sanctions should any of the established requirements not be complied with. MiFID is looking at the entire trading process – from receiving authorisation to trade, to pre-trade activities, to trading. Furthermore MiFID instructs cross border cooperation between Member States, and ensures Union wide compliance.

[47] Source: Directive 2004/39/EC, articles 48-55

4.2 Impact of MiFID

With the report on "Impact of MiFID on equity secondary markets functioning" by CESR[48] being the point of reference, a number of areas have been impacted by the adoption of MiFID. Some of these impacts followed the intent of MiFID, but the adoption of MiFID also saw results not intended, or expected, by the adoption of MiFID. Some key areas were affected by the adoption of MiFID:

- Trading
- Pre-trade transparency
- Post-trade transparency

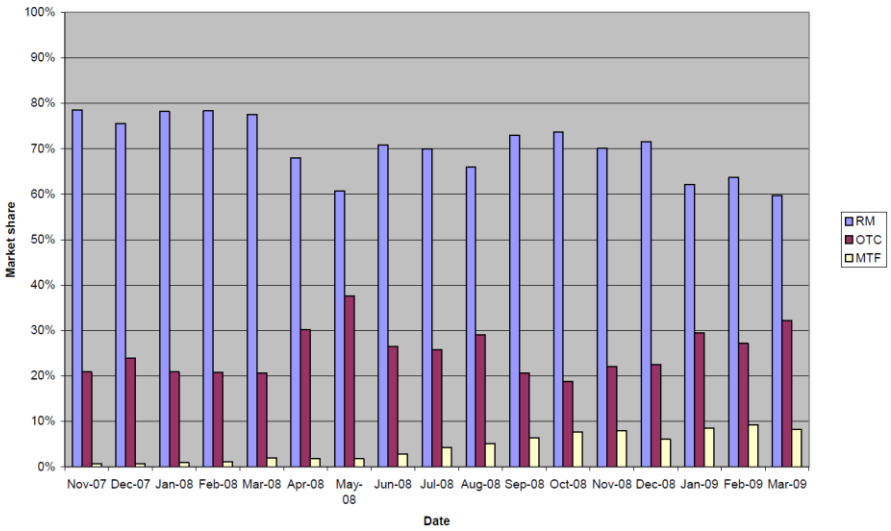
The main focus of MiFID being transparency and data availability, these areas has, not surprisingly, seen a lot of change. But with MiFID enhancing the regulation of the financial markets, the consequences of the adoption of MiFID were far from certain – thus results as expected, as well as unexpected result alike, have occurred following the adoption. These results were positive as well as causing new issues. With the implementation of MiFID, there are now more sources, where trade data may be published.

In addition to transparency results, and issues, there has also appeared a range of changes to trading trend following the adoption of MiFID.

Before going into further detail in regards to trading and transparency following the adoption of MiFID, it is important to point out, that the changes which have occurred following MiFID, are far from certain to be a direct result of the adoption of MiFID. The financial market have seen some volatility during the time following MiFID coming into force. Furthermore, the report is only working with data from a limited period of time, thus somewhat limits the credibility of the long-term results of MiFID.

4.2.1 Trading

One of the biggest changes caused to trading following MiFID is the venues now being available for trading. This being organised markets (regulated or MTF), or investment firms acting as Systematic Internalisers (SI) or executing OTC trades. Especially MTF have seen a rise in numbers of platforms as well as trading. Since MiFID came into force, there has been a big rise in trading on MTFs (from about 1 % to about 8 %). OTC and Regulated Market trading have been fluctuating during the period considered, with a



Source: Thomson Reuters Market Share Reports

[48] CESR (Committee of European Securities Regulators) were the predecessor to ESMA (European Securities and Markets Authority). ESMA is an independent authority safeguarding the stability of the European Union's financial system. ESMA does this by contributing to develop rules as well as monitoring the system. (Source: http://www.esma.europa.eu/page/esma-short)

slight overall decrease on Regulated Market and slight increase on OTC trading. These changes are slight, and might be, at least partially, due to the volatility of the financial market during the period November 2007 to March 2009, but the increased availability of venues following MiFID is by large to be considered the cause. It is worth noticing, that trading on MTFs are still only a small part of the total market[49], but might see an increased part of the market if it continues its upward going tendency.

These new MTFs offered lower trading fees, As a result hereof, a lot more trading have been taking place following MiFID. There has been a change in trading by increase in number of trades, but reduction in the average size of orders. In 2006 the average size of orders were £19.362 with roughly 78 million trades. This changes to an average of £10.094 and roughly 184,5 million trades in 2008.[50] Thus the average order size have nearly halved and number of order books more than doubled, and as a result, there have been a fragmentation of the market – opinions are divided as to whether this is good or bad. It is important to mention the total value traded have seen an increase and might have affected the numbers as well. When accounting for this, there has been a significant change in trading tendencies following MiFID coming into force. The years prior to MiFID saw a slight change in trading tendencies as well, but the numbers took a significant jump following MiFID, which is why MiFID is considered to have an a significant effect on trading tendencies.[51]

In addition to lower cost per trade have gone down, new algorithmic trading are now taking place. With algorithmic trading, additional decimals are added in trading, making small fluctuations exposed to trade activity. This, in connection with lowered trading costs, are considered the main causes of the increase in amount of trades taking place.

Though the addition of MTFs on the financial market have lowered the cost of individual trades, there are concerns the total cost of trading, when looking at the entire market, has gone up. This is due to the amount of trading now taking place – while the cost per trade has gone down, the increase in amount of trades, and fragmentation of the market, accumulate a higher total cost of trading for the same volume as prior to MiFID.

[49] In September 2008, the London Stock Exchange closed for technical reasons, but trade didn't switch to MTF. This have been interpreted as sign of people still relying on regulated markets. (Source: CESR)
[50] These numbers are the reported numbers from the London Stock Exchange only.
[51] Source: Committee of European Securities Regulators, Impact of MiFID on equity secondary markets functioning

4.2.2 Pre-trade Transparency

With MiFID aiming to create pre-trade transparency regarding trading on regulated markets and MTFs, some issues have risen. The regulated markets and MTFs are to make public details of best bids and offers. Under certain circumstances under MiFID, some pre-trade transparency may be waived. As a result hereof, "dark pool"[52] have emerged. In addition to dark pools, there are examples of investment firms matching client's orders internally, thus avoiding the pre-trade transparency. Therefore some regulated markets and MTFs have raised the issue that a level playing field in regards to pre-trade transparency doesn't exist. The lack of pre-trade transparency on regulated markets and MTFs is therefore causing uncertainty in regards to the price discovery process, affecting the quality of the market.

Furthermore, Systematic Internalisers[53] have predominantly used one-sided quotes. This, by definition in MiFID, is permitted. Market participants however, see this as a way for Systematic Internalisers to hide the size and price of their trading. CERS recognises this creating issues surrounding value and nature of the Systematic Internalisers' obligations.

There are general concerns, that in practice there appear to be different rules applicable depending on what kind of participant, operator etc. you are, thus creating an unlevel playing field in connection to pre-trade transparency. This in particular is a concern in regards to how you are assigned waivers, thus being exempt from pre-trade transparency. However, there are people who maintain a certain opaqueness is required to safeguard their clients' best interests.

4.2.3 Post-trade Transparency

One of the major concerns regarding post-trade transparency, is the quality of the post-trade data/information. Prior to the implementation of MiFID, the main regulated market consolidated equity data as well as monitoring the quality. This is particular a concern in regards to OTC trading. Some of the worries concerns who should publish trade information, and where this information should be published. At the time of publishing of the CERS report, the CERS had already begun looking into how this could be improved.

In continuation of data quality, concerns have been raised as to the cost of accessing this wanting data, and such costs are limiting the accessibility of the data. Furthermore, the increased amount of sources available for publishing data, have caused concerns in regards to fragmentation of data, thus hindering the overall transparency goal set out in MiFID. There appear not to be a set way of publishing the data if published on different sources, thus making it more difficult to consolidate.

[52] Not defined in MiFID, but CESR define it as "a dark pool of liquidity is a regulated market's or MTFs trading facility where there is no pre-trade transparency, i.e. where orders are not publicly displayed, based on pre-trade transparency waives provided by MiFID". (Source: CESR, item 83)

[53] Systematic Internalisers are investment firms dealing on account, executing client orders outisde a regulated market or MTF. This they do by executing client orders amongst its own clients.

4.3 Intent of Bringing Emission Allowances Fully Into the Scope of MiFID II

Generally speaking, MiFID II was adopted as a way of streamlining the original MiFID (Directive 2004/39/EC). MiFID in itself was meant as a way of protecting investors, by way of harmonising investor-oriented activities; supporting union-wide activities with reference to the internal market of the EU. This is reflected in the recitals item 7 "Since the main objective and subject-matter of this Directive is to harmonise national provisions concerning the areas referred to…".

Various amendments have been made since the adoption of the original MiFID in 2004, and MiFID II was meant as a way of creating greater coherence in the Directive. In continuation hereof, the European Council felt the need to gather all regulation regarding regulating financial institutions in the internal market in one set of rules. As a result, MiFID II was adopted along with MiFIR (Market in Financial Instruments Regulation) – some parts of MiFID were moved to MiFIR, thus requiring reading MiFID II and MiFIR as a whole.

Furthermore, the financial crisis exposed weaknesses, which previously weren't transparent, and MiFID II looked to manage these weaknesses. These weaknesses were exposed as result of changes to the market following the financial crisis. MiFID hadn't accounted for such changes to the market, thus needed updating. The two chief subjects in this regard were to address apparent unregulated areas and emphasize regulation of over-the-counter trading, with over-the-counter trading showing a particular need for more transparency.

With the adoption of MiFID II emission allowances were fully included as a financial instrument. Previously emission allowances were partially included, as "derivatives". Emission allowances are being partially considered a "derivative" due to derivatives in connection to the carbon market are futures, forwards, and options of emission allowances[54] - all of which falls under the rules in MiFID. Since it previously only were derivatives being under the scope of the Directive, emission allowances in full were added by the adoption of MiFID II. The difference between "derivatives" and "emission allowances" are spot trading; which are not part of "derivatives". With the adoption of MiFID II, spot trading of emission allowances are now regulated by the MiFID rules alongside futures, forwards and options.

[54] Source: European Commission, MEMO/11/719

The reasoning for bringing emission allowances fully into the scope of the Directive is to be found in the recitals item 11:

> *A range of fraudulent practices[55] have occurred in spot secondary markets in emission allowances (EUA) which could undermine trust in the emissions trading scheme, set up by Directive 2003/87/EC of the European Parliament and of the Council, and measures are being taken to strengthen the system of EUA registries and conditions for opening an account to trade EUAs. In order to reinforce the integrity and safeguard the efficient functioning of those markets, including comprehensive supervision of trading activity, it is appropriate to complement measures taken under Directive 2003/87/EC by bringing emission allowances fully into the scope of this Directive and of Regulation (EU) No 600/2014 of the European Parliament and of the Council, by classifying them as financial instruments.*

These fraudulent practices created doubt about the EU ETS and whether the regulation surrounding the EU ETS made it a capable financial instrument used to meet the committed emission reduction targets. Furthermore, the hacking and phishing schemes detected in 2011, created doubt in emission units and carbon credits themselves, due to uncertainty as to whether a purchased unit or credit were valid, or had in one way or another been part of a hacking or phishing scheme. During spring 2011, when the fraudulent practices were discovered, spot-trading of emission allowances were halted, due to the doubt in units and credits. This created even more uncertainty, and disrupted the carbon market. The adoption of MiFID II was seen as a way of facing these fraudulent practices, and try to prevent any future incident occurring.

The current growth as well as the expected future growth of the European carbon market, deemed it necessary to have regulation in place, ensuring oversight and transparency into the carbon market. As a result, the adoption of MiFID II was meant as a way of easier data access for market participants, as well as ensuring control of misconduct, thus ensuring the functioning of the market – misconduct including, but not limited to, market abuse.[56]

As a result, the adoption of MiFIR limited the availability of exemption from pre-trade transparency to certain defined cases.[57] Furthermore, transparency is deemed needed to ensure efficient price discovery or a transparent level playing field, due to trading being done over-the-counter as well as on various trading venues.

The Commission deemed it preferable to put emission allowances fully into the scope of the Directive, due to emission allowances already partially being under the scope of the Directive. Furthermore, the already existing rules in MiFID would be similar to what was expected of a tailor-made solution for the spot market, thus making it more efficient to fully adopt emission allowances under the scope of MiFID rather than creating a new regulation(s). The rapid growth of the carbon market (from €6 billion to €90 billion turnover

[55] These practices being VAT fraud and theft of allowances. VAT fraud by circulating emission allowances by buying emission allowances in one country, then selling them domestically – the end-result being a VAT gap, resulting in a profit.
Theft of allowances took place as phishing scams and as hacking. The latter resulted in closing of spot trading temporarily, disrupting the carbon market. (Pereira & Nield, Fraud on the EU ETS: Effects, Vulnerabilities and Regulatory Reform)

[56] Source: Directive 2014/65/EU

[57] Source: Regulation No. 600/2014

over a five year period), as well as the expectation of continuous growth of the carbon market, made it favorable to put emission allowances fully into the scope of MiFID, thus making use of an already existing system, and not be limited by time and costs of setting up a new system as well as risking inconsistencies with the rules already governing the market.[58]

4.3.1 Emission allowances in MiFID II/MiFIR

In addition to emission allowances being added to MiFID by way of being adopted as a financial instrument (annex 1, section C), four articles in MiFID II are adding "emission allowance" as part of the direct wording in the Directive.

First and foremost article 2 are making exemptions to where the Directive is not applying to emission allowance trading. Article 2, paragraph 1 litra d exempts persons dealing on own account when dealing with emission allowances, as long as it's not providing investment services or performing investment activities in other financial instrument. In litra e, operators dealing as a result of compliance obligations under Directive 2003/87/EC are exempt as well. The people dealing on own account in connection to article 2, are most likely, but not limited, to be companies who a dealing with emission allowances compliance obligations under Directive 2003/87/EC alongside operators mentioned in litra e.

Article 58 establishes position reporting by categories of position holders. By this, investment firms and operators are required to report their position and the changes made to their position. This reporting is to be done on a daily basis, and is to be done to a competent national authority or the central competent authority.

Article 79 instructs competent authorities dealing with emission allowances trading to cooperate with competent authorities, registry administrators and other public bodies dealing with compliance under Directive 2003/87/EC. This is ensuring the emission allowance market is being monitored and all activities are being consolidated, thus creating more transparency.

Lastly article 88 allows Member States and ESMA to gather information from third countries as a way of consolidating overview of the financial and spot markets. Article 88 is not likely to be relevant in many cases, but establishes the opportunity to gather information from third countries if the need should arise – emission allowances in MiFID II are mainly in connection to EU ETS, thus not dealing with third countries.

These 4 articles summarised are merely the places in MiFID II where emission allowances have explicitly been mentioned. But by adopting emission allowances as a financial instrument, emission allowances are, generally speaking, subject to the Directive in its entirety – though still subject to exemptions in article 2.

[58] Source: European Commission, MEMO/11/719

4.3.2 Expected Impact of MiFID II/MiFIR

The transparency issues identified during the years following the adoption of MiFID, were the main focus of MiFID II. The key to deal with this lacking transparency, were identified as issues with data in connection to trading. MiFID brought regulation of financial instruments in the EU to a whole new level, thus the knowledge of what level of regulation were required to meet the intended goals, were uncertain. In addition hereto, the financial market faced diversity which weren't accounted for in MiFID, and had to be addressed in MiFID II as well.

The experiences gained the years following the adoption of MiFID showed the need for more rigorous regulation as a way of ensure the gathering of sufficient data to achieve the desires level of transparency. With the experiences gained following the adoption of the Directive, it's fully expected, that the updated rules in MiFID II will suffice to ensure gathering and sharing of data to reach the desired level of transparency.

Some of the lacking data transpired due to heavy use of over-the-counter trading – which in MiFID weren't reportable. With MiFID II making OTC trading reportable, more transparency is expected as a result of lesser occurrence of dark pools and -trading.

The level of data requirements set out in MiFID, resulted in increased cost. This in turn created an uneven playing field between the market participants – small and medium market participants weren't able to compete with major market participants, as they were unable to effort the increased cost of partake in the market. The updated rules in MiFID II seek to erase this unintended differentiation, thus creating a level playing field for market participants.

Disregarding the discovered deficiencies in MiFID, it was seen as a good starting point for monitoring trading of emission allowances. With no prior monitoring of emission allowance trading, and the following fraudulent practices, MiFID II is expected to ensure oversight of the spot carbon market. Emission allowances are expected to be able to adapt to now being considered a financial instrument, and being regulated as such. Prior to MiFID II being adopted, concerns were raised in regards to emission allowances being included as a financial instrument[59] - financial instruments are generally speaking considered instruments for investments, where emission allowances in this regard are more likely to be considered to be used for hedging. Despite these concerns, emission allowances were adopted as a financial instrument, and MiFID II is expected to sufficiently regulate emission allowance trading at the same satisfactory level as a tailored regulation otherwise would have.

[59] Source: European Commission, Commission Staff Wokring Paper Impact Assessment

5. Emission Allowance Trading Following the Adoption of MiFID II

The regulation to emission allowance trading following the adoption of MiFID II is expected to affect the three market players discussed in chapter 3.2:

- Trading platforms
- Compliance buyers
- Market intermediaries

The effect on these three different market players are very different, but will all influence the carbon market in the EU, and is likely to change the way carbon market is being considered in the future.

Trading Platforms

When looking at trading platforms, there are currently three major carbon exchanges offering spot trading in emission allowances, having status of a regulated market and conform to the requirements set out in MiFID. These platforms are already dealing with other commodities applicable to MiFID, thus have already complied with the requirements set out. These major venues are therefore not expected to be effected greatly with the adoption of MiFID II. Smaller venues however, namely national and regional venues, who previously haven't been applicable to conform to the requirements of MiFID, will face great costs if they want to continue operating as a trading platform for emission allowances.

Regardless of whether you're a major or minor trading platform, you will still be required to conform to the new requirements set out in MiFID II. This mean an increase in work in connection to monitoring trades and gathering data, as well as submitting the gathered data to the competent authority.

In addition to the direct cost of a MiFID license, the increase in monitoring and data gathering are likely to require new equipment which, would not only be an additional cost to acquire, but is also likely to accrue additional running costs. All this together adds up to a quite noticeable rise in cost of trading emission allowances. This increase in cost however, is something the trading platform will be able to pass on to buys and seller; regardless of these being compliance buyers or market intermediaries.

Compliance Buyers

Compliance buyers are certain to see an increase in cost of trading emission allowances. With allocation of emission allowances moving from free allocation to auctioning, these costs are certain to see an increase as the increase in costs, forced onto trading platforms by MiFID, will most likely be passed on to the compliance buyers. As compliance buyers are the ultimate buyers, as a result of having to comply with the obligations under Directive 2003/87/EC, they are the ones in need of emission allowances, making it natural for them to defray such additional costs.

Market intermediaries

Market intermediaries are the ones likely to feel the changes to emission allowance trading following the adoption of MiFID II the least. Many market intermediaries are likely to already be participants on the market. This is a result of them likely to already trading in derivatives, thus being subject to regulation set out in MiFID. Furthermore, these market intermediaries will have procedures and experience in complying with the already existing requirement under MiFID, and are therefore less likely to struggle to comply with the extended requirements under MiFID II.

Though market intermediaries are less likely to feel the impact of MiFID II, some affect is to be expected. Like trading platforms as well as compliance buyers, market intermediaries will likely see an increase in cost in connection with emission allowance trading. However these additional costs are something they will be able

to pass onto their client(s) – most likely to compliance buyers whom they're acting on behalf of. Regardless of market intermediaries being able to pass the additional costs on, they are still likely to face an additional workload as a result of the extensive requirements set out with the adoption of MiFID II. Thus will markets intermediaries have to adjust when MiFID II comes into effect.

When looking at all three market players, there will therefore be a significant increase in work connected to emission allowance trading compared to pre-MiFID II – simply due to the added requirements concerning data availability.

Unlike "traditional" financial instruments, will emission allowances, with the adoption of MiFID II, see a sudden significant increase in what is required to comply with regulation aimed at regulating trading. Traditional financial instruments had the advantage of being subject to the more lenient regulation of MiFID, thus having had time to adapt and will not face as great a transition from MiFID to MiFID II. Emission allowances however, have not previously been subject to regulation in regards to trading. Being thrust straight into MiFID II without having experience from MiFID, the carbon market in the EU is likely to face some early challenges – the lack of experience might cause complications during the trade process, and market players might need time to adjust. Fortunately MiFID II doesn't come into effect until 2017, which leave time for the market players to adjust and hopefully take precautionary measures in time.

With some of the trading platforms and market intermediaries already being familiar with MiFID, they are likely to manage the added requirements of MiFID II better than other players not already familiar with MiFID. This causes concern as to the outlook of a level playing field. The major players already in place and somewhat already having complied with MiFID, will stand considerably stronger than the small and medium players thus creating an uneven playing field. This is contrary to the intent of creating a level playing field. Only experience will tell whether MiFID II will remedy the uneven playing field, or if it creates new issues, thus not remedying the issues discovered following the adoption of MiFID.

6. Conclusion

Emissions and how they affect the climate have been focused more and more during the last few decades. This focus has caused the international community to realise the need for measures to be taken, so as to counter the severe effects the increase in emissions have on the climate.

With the EU acting as a community, it established the EU ETS. This saw some early struggles due to lack of experience concerning emission allowances and how to manage them. With the passing of time and experience gained, measures were taken to improve the EU ETS. However, it was discovered that the EU ETS in itself was insufficient to regulate trading of emission allowance. Rather than tailoring a new set of regulation for trading of emission allowances, emission allowances were adopted as a financial instrument and brought under the scope of MiFID. This linked two extensive regulatory areas, which previously had not been considered connected, and brought them into the scope of each other.

MiFID extensively uses the term “investment firms” in its wording throughout the Directive. More traditional financial instruments are used for investments, unlike emission allowances. It is therefore somewhat of a surprise to see emission allowances being brought under the scope of MiFID. This is especially the case, when considering how the majority of emission allowances are being created as well as the reasoning behind – emission allowances being means to an end to comply with the committed emission reductions. Despite the differences between emission allowances and traditional financial instruments, they are still being traded the same way, thus making the connection between the two.

With the fraudulent practices occurring prior to bringing emission allowances under the scope of MiFID, uncertainty on the European carbon market started surfacing. The increased monitoring and rigorous control of the market following the adoption of MiFID II is likely to succeed in dealing with the issues of fraudulent practices as well as dealing with any dark pools there have previously occurred. However, as a consequence of the increased requirement to data availability and control of the European carbon market, the cost of individual trades are most likely to go up. With more and more EUAs being allocated by auctioning, reaching 100 per cent no later than 2027, obtaining free allocation will no longer be possible, thus leaving persons subject to comply with obligations under Directive 2003/87/EC with an increase in costs of complying. This increased cost is in strong contrast to the idea of EU ETS being “cost-effective and economically efficient”. However, the ideas of cost-effectiveness and economically efficiency seem less relevant in contrast to the overall goal of reducing emissions, while having a trustworthy and efficient carbon market.

The challenges to emission allowance trading that emerged as the EU ETS evolved when going through its phases, forces the European Commission to take steps so as to ensure the continuous functioning and integrity of the European carbon market. Concluding adopting emission allowances as a financial instrument were the best and most efficient approach. However, it has left emission allowance trading facing a lot of challenges the coming years. Adopting emission allowances as a financial instrument though, is likely to have ensured transparency and security on the European carbon market. The increased costs of ensuring this transparency and security, seems to be less of an issue, as the costs are likely to be passed on to the perons committing the emission, this following the notion of “polluter should pay”. Furthermore, this increase in costs might even turn out to be means to an end – increased costs might make it preferable for compliance participants to reduce their emissions rather than obtaining more emission allowances, thus moving towards the goal of reduce total emissions.

The players participating in the EU ETS will face a lot of data managing and reporting as a result of the adoption of MiFID II, but will partake in a more transparent system as a result.

Working with the Kyoto Protocol, EU ETS and MiFID has been an extensive task, due to how extensive these areas are. With emission allowances being necessitated as a financial instrument, these two otherwise separate regulatory areas were interlocked, and the way each subject is perceived, had to be changes as a result.

As a result of MiFID II only recently being adopted, and emission allowance trading not previously being regulated, the amount of data available were very limited. This in turn led to looking at traditional financial instruments, and reflect these onto emission allowances. Since these are part of two different legislative areas and both being fairly new, added to the challenge as well.

When all this is considered, emission allowances in the EU is expected to see growth and become a vibrant market in the near future – with reservation to the market participants adapting to the new regulation following the adoption of MiFID II.

7. Bibliography

7.1 Books

Freestone, David & Streck, Charlotte
Legal Aspects of Carbon Trading
Oxford, 2009
Oxford University Press

7.2 Treaties

Doha Amendment

Kyoto Protocol

UNFCC (United Nations Framework Convention on Climate Change)

Background on the UNFCCC
http://unfccc.int/essential_background/items/6031.php

Conference of the Parties
http://unfccc.int/bodies/body/6383.php

Feeling the Heat: Climate Science and the Basis of the Convention
http://unfccc.int/essential_background/the_science/items/6064.php

7.3 Directives & Regulations

Directive 2003/87/EC (Greenhouse Gas Emission Allowance Trading Scheme Directive) (EU ETS)

Directive 2004/39/EC (MiFID)

Directive 2004/101/EC (Linking Directive)

Directive 2009/29/EC (Common EU Allocation Plan)

Directive 2014/65/EU (MiFID II)

Regulation (EU) No 1031/2010 (Emission Allowance Auctioning Regulation)

Regulation (EU) No 600/2014 (MiFIR)

7.4 Other

Committee of European Securities Regulators (CESR)
Impact of MiFID on equity secondary markets functioning (CESR/09-355)
10th June 2009

Danish Business Authority
Carrying Out Transactions
http://danishbusinessauthority.dk/carrying_out_transactions

European Security and Markets Authority
www.esma.europa.eu

European Commission – http://ec.europa.eu/index_en.htm
Banking and Finance

Climate Action, Emissions Trading System (EU ETS)

Commission Staff Working Paper – Impact Assessment

Factsheet - The EU Emission Trading System (EU ETS)
Publications Office, 2013

Greenhouse effects
http://ec.europa.eu/clima/sites/campaign/pdf/greenhouse_effects_en.pdf

MEMO/11/719

Understanding Greenhouse Gases
http://ec.europa.eu/clima/sites/campaign/pdf/gases_en.pdf
(PDF downloaded 5th august 2014)

European Energy Exchange
At The Centre of European Energy Exchange (factsheet)
January 2014

Forster, Piers & Ramaswamy, Venkatachalamy
Fourth Assessment Report
Chapter 2, Changes in Atmospheric Constituents and in Radiative Forcing
IPCC – Intergovernmental Panel on Climate Change

Holdren, John P.
Metting the Climate-Change Challenge
Eighth Annual John H. Chafee Memorial Lecture on Science and the Environment

Annex I

Greenhouse Gas Conversion Chart

Gas Name	Chemical Formula	Global Warming Potential for Given Time Horizon		
		20 years	100 years	500 years
Carbon Dioxide	CO_2	1	1	1
Methane	CH_4	72	25	7,6
Nitrous Oxide	N_2o	289	298	153
Tetrafluoromethane	CF_4	5210	7390	11200
Hexafluoroethane	C_2F_6	8630	12200	18200
Sulfur hexafluoride	SF_6	16300	22800	32600
Nitrogen trifluoride	NF_3	12300	17200	20700

ICCP Fourth Assessment Report, table 2.14, chapter 2, p. 212