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# **CO2 TRADING - A FLAWED BUT NECESSARY SYSTEM**

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## 25 **Editorial: Quota critics forget the environment**

30 By Jesper Rolin

35 There is little doubt that the European CO<sub>2</sub> trading  
system is very complex and confusing. And  
several parties are questioning the effects of the  
EU scheme.

40 Often the debate revolves around a few specific  
points. It is often experts from various  
organisations who believe the EU Emission  
Trading Scheme (ETS) is making it easier for  
companies in the rich western world, to opt out of  
their responsibility.

45 For instance Greenpeace criticise the fact that  
the companies are being given free quotas from  
the local government. Indeed in an ideal world  
that would not happen. But the emission trading is  
designed so the companies can reduce their  
emission gradually. Making all the companies  
included in the ETS pay many million Danish Kr.  
from one day to another, could send the bottom  
line of many companies in the red. And it could  
also have a negative effect on the competitiveness.

50 It is important that European companies make  
an extra effort to reduce their emission of CO<sub>2</sub>,  
but Rome was not build in one day.

55 From 2013 the quotas that is given to the  
companies, will be gradually taken away over a  
period of eight years.

60 A more pressing issue than the free quotas, is that  
it's currently only very few sectors that are  
participating in the CO<sub>2</sub> trading. A few more will  
be added when the ETS is entering its next phase  
from 2013, but still there are a lot of the sectors,  
such as all transportation that is taking place on  
the roads, that is not included in the CO<sub>2</sub> trading.

65 While air transportation has been put in under the  
ETS from 2012, there has only been a vague  
chattering about transport on the roads.

70 The strange thing about the ETS is that it  
shouldn't be regarded as much as an initiative to  
help the environment, as it should be regarded as

75 a way for the EU to cover their own behind so  
they can live up to their Kyoto requirements;  
Atleast not at the moment. However, this is  
supposedly how CO<sub>2</sub> emission is going to be  
reduced in the future, after Kyoto ends. Naturally  
this is dealing with reduction of CO<sub>2</sub>, so in that  
sense, it deals with the environment, but the  
overall reasoning behind it, is that the ETS is a  
cost efficient way to make sure the EU can live up  
to the Kyoto agreement.

80 But when the ETS is criticised because it allows  
companies to reduce the emission abroad instead  
of at home, people tend to forget that the  
atmosphere doesn't care, where the CO<sub>2</sub> is  
emitted. It is often cheaper to make reduction in  
countries like China and India, than it is in  
Denmark and Germany. Seen from an  
environmental point of view, a reduction is a  
reduction, it doesn't matter where in the world it  
takes place.

85 People often tend to foget what CO<sub>2</sub> quotas are  
all about. We need to slow down the global  
warming.

90 The importance of the climate summit in  
Copenhagen is rarely disputed, but it appears  
unlikely that the result of it will be optimal. It  
seems unlikely that the financial crisis won't have  
a quite big impact, because reducing CO<sub>2</sub> means  
making costly improvements, even if it is in China  
or India.

95 Saving the world is unfortunately an abstract  
ambition, which is harder to relate to, than the  
unemployment rate.

100 If we are to successfully reduce the global CO<sub>2</sub>  
emission, it is crucial that the largest players  
works together and comes to an agreement of  
reduction plans, for both the close and the long-  
term future.

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## 115 Credits makes companies opt out of responsibility

120 **When European countries are trading  
CO<sub>2</sub> quotas with each other, it is opting  
out of responsibility according to  
Greenpeace. However, it is a necessity  
in order to make the CO<sub>2</sub> trading  
system work.**

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Greenpeace thinks it is bad that companies are trading CO<sub>2</sub> credits with each other. The credits are gained by making CO<sub>2</sub> reductions in other countries instead of reducing the emission on their own soil.

130 Greenpeace has been a criticizing voice in the debate about CO<sub>2</sub> quotas. They believe that companies are opting out of their own responsibility by initiating CO<sub>2</sub> reducing project abroad, which gives them a free pass when it comes to reductions at home.

140 "In Greenpeace we believe that a part of the problem lies in the way companies can buy credits in other countries outside the EU. The Emission Trading Scheme is designed in such a way, that it is possible for the companies to buy compensation through projects in other countries outside the EU and that is a problem. The system was originally designed as an EU initiative," Tarjei Haaland, Climate and Energy Staff Member at Greenpeace, says. It is important that the rich countries take responsibility, when it comes to combating climate change Tarjei Haaland explains and says:

150 "The rich countries [and there by companies] have to walk in the front. That is why it would be dreadful if the rich EU countries doesn't make CO<sub>2</sub> reductions themselves, but buy all the reduction through credits outside the EU."

155 From the University of Southern Denmark in Odense, Associate Professor in environmental economics, Per Andersen, partly agree with the criticism. He explains how the main problem with the projects that reduces the CO<sub>2</sub> outside the EU, is based on the fact that it is very difficult to control. The possibility for swindling with the reduction numbers is very real. But there is also

another reason; the grounds for the reduction are very hypothetical.

165 "If a project is investing in a windmill in China to replace parts of the production at a coal based power plant, then the company that invest in the project get CO<sub>2</sub> credits for it. The problem is that it's very difficult to check how big an effect it has; it is possible that they would have invested in the windmill themselves anyway," Per Andersen tells. He believes that there are some places where some swindling is going on, but it is not everyone who takes part in it.

175 Even though the Associate Professor Per Andersen, can see several problems in the ETS, he definitely also sees positive sides of it.

180 "Making projects outside the EU creates the opportunity for technology transfer between highly developed countries and less developed countries. When the ETS works, it is a lot easier to make cost efficient reductions of the CO<sub>2</sub> emission in a country like China than it is in Denmark. In Denmark we have already made the easy reductions, we mainly have the difficult and expensive ones left," Per Andersen elaborates.

### Emission Trading Scheme

The Emission Trading Scheme, or ETS as it is often referred to, is a system made by the EU. It is the worlds largest system of its kind, covering all of the 27 EU member states and more than 11.500 energy intensive installations throughout the EU.

The ETS is a trading system that allowed companies to trade CO<sub>2</sub> allowances with each other.

ETS was started back in 2005 as a way for the EU countries to live up to their Kyoto commitments. However, it wasn't till 2008 the system started to work properly.

### Companies need to trade

190 European companies that are subject to the EU Emission Trading Scheme (ETS) are trading quotas with each other. If one company has a spare quota they sell it to another.

195 "The ETS system is a market based solution with approximately 11,500 companies in Europe, which can trade with one another," Frank

200 Rasmussen, Head of Market Trading at DONG Energy, says. DONG is one of the Danish companies that have to keep a close eye on their carbon dioxide (CO<sub>2</sub>) emission and make sure they do not emit more CO<sub>2</sub> than they have quotas.

205 “The trade between the companies is a condition for a well-founded market. For the individual companies it can ensure a sufficient amount of quotas. This is to ensure that the EU can reach its reduction goals in a cost efficient way,” he elaborates.

210 It is however not only the quotas which the companies receive from the government that is being traded. It is also the so-called CO<sub>2</sub> credits, which are gained from CO<sub>2</sub> reduction in countries outside the EU.

### Credit VS. Quota

A CO<sub>2</sub> quota and a CO<sub>2</sub> credit is both equivalent to 1 tonnes of carbon dioxide.

CO<sub>2</sub> Credit: A CO<sub>2</sub> credit is acquired by a company by making a project outside the EU that reduces the CO<sub>2</sub> emission.

CO<sub>2</sub> Quota: A CO<sub>2</sub> quota is given to the companies by the EU.

Certain types of CO<sub>2</sub> credits can be traded into quotas, while other has to be used to offset the companies' own CO<sub>2</sub> emission.

### Best possible solution

215 And it is not only Greenpeace that believes there are better options than reducing the CO<sub>2</sub> emission through credits in other countries outside the EU. The Danish Member of the European Parliament (MEP) and Deputy Chairman of the European Parliaments Environmental committee, Dan  
220 Jørgensen also feels that the credits take up too much space in the overall picture.

225 “I am generally a believer of CQ credits, but I think the companies are using this mechanism way too much. At the moment, it makes up for more than 50 percent of the overall CO<sub>2</sub> reduction in the EU,” Dan Jørgensen explains.

230 “The ETS is the best possible solution because it ensures a positive incentive for the companies that need to make the reduction. The EU reduces the amounts of quotas given to the companies at specific milestones; those companies that are

235 capable of making their production more environmentally friendly before they have to, they have the opportunity of selling their quotas,” Dan Jørgensen says.

The MEP explains that when such a high percentage of the reduction is taking place through credits, which is reducing the price of the quotas on the open market. If it is cheaper for a company to initiate a project abroad and reduce the CO<sub>2</sub> emission outside the EU by 100 tonnes of CO<sub>2</sub>, equivalent to 100 quotas, than it is for the company to buy them at the open market it naturally makes the price drop.

### The Different CO<sub>2</sub> quotas

RMU: A removal unit is a tradable credit issued upon removal of greenhouse gasses in the atmosphere. A way to gain an RMU is to support in reforestation.

ERU: An emission reduction unit is gained by a making project in another country that is assigned to reduce its CO<sub>2</sub> emission under the Kyoto Protocol that reduces or removes the CO<sub>2</sub> emission.

CER: A certified emission reduction is a tradable CO<sub>2</sub> credit equivalent to one tonnes of CO<sub>2</sub>. This type can be bought and sold by the companies that are subject to the EU emission-trading scheme and are traded on various exchanges.

EUA: A european union allowance is a CO<sub>2</sub> quota given to the companies included in the ETS free of charge. All companies are given these quotas, but the amount depends on the emission of the company.

The RMU, ERU, CER and EUA are all equivalent to one tonnes of CO<sub>2</sub> and can all be used to count towards the reduction goals set forth in the Kyoto Protocol and the EU.

### Change of profile

245 Since a business is responsible to its stakeholders, they need to make sure their bottom line looks as good as possible. So if it is cheaper for them to buy CO<sub>2</sub> certificates or CO<sub>2</sub> credits to cover their CO<sub>2</sub> emission, it would seem natural if the incentive for lowering their own CO<sub>2</sub> emission drops. But it is not quite true according to DONG Energy.

255 “Our goal is to change the current production of

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electricity, which today comes from 85 percent fossil fuels and 15 percent renewable energy to the opposite ratio over the next generation,” Frank Rasmussen, Head of Market Trading at DONG Energy, says. 310

260 The energy company is already working on initiatives to reduce the emission. One example could be the investments they are making in wind-energy. They are for instance currently working on the construction of an offshore windmill park in Denmark. Another example could be an initiative the company has started which focuses on research and development of cleaning of power plant’s flue gas. The CO<sub>2</sub> is extracted and stored instead of emitted out into the atmosphere. 315  
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## CO<sub>2</sub> reduction locally and globally

340 **The climate summit in Copenhagen is  
approaching rapidly; CO<sub>2</sub> has certainly  
been put on the agenda in the capital.  
CO<sub>2</sub>-neutral hotels are ready to receive  
their guests, and the city itself is  
starting to take action to make  
345 Copenhagen CO<sub>2</sub>-neutral.**

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350 The sun is shining and the azure blue sky is  
hanging high above the streets of Copenhagen.  
The café-life is starting to bloom again as  
summertime is approaching. When looking  
around everything looks nice and idyllic but still  
Copenhagen is eager to help the environment and  
355 walk ahead of the curve. Plans for being the first  
capital in the world that gains the somewhat  
prestigious title of being a CO<sub>2</sub>-neutral, has been  
put forth.

360 By the year 2025 the entire carbon dioxide  
(CO<sub>2</sub>) emission of the city is planned to be offset  
by a range of different initiatives.

365 “As a metropolis it is necessary to take  
responsibility for the influence the city has on  
its surrounding environment,” the Mayor for  
Technics and Environment in Copenhagen,  
Klaus Bondam, says. He explains that it is  
necessary to be ambitious and be ahead of the  
curve in order to lead the way to sustainable  
societies in the world.

370 “Denmark is a pioneer country and as such we  
must dare to have ambitious goals with strict  
standards. With the climate plan, we have put  
forth the goals and outlined the initiatives needed  
to become CO<sub>2</sub>-neutral. I am not afraid to break  
375 my neck on this,” Klaus Bondam says.

### It's all about Copenhagen

380 The future of the carbon dioxide (CO<sub>2</sub>) trading  
scheme is on shaking ground at the moment,  
because the EU cannot change the CO<sub>2</sub> reduction  
of the world alone. It all comes down to the

385 climate summit in Copenhagen this December  
also known as the COP15 meeting. Currently the  
only really big initiative, when it comes to CO<sub>2</sub>  
trading, takes place within the borders of the EU.  
According to the Union of Concerned Scientists, a  
science-based non-profit organisation, it is only  
six of the 20 heaviest CO<sub>2</sub> emitting countries that  
390 are found within the EU. In total those six  
countries emit a bit more than 3 billion tonnes of  
carbon dioxide a year, which is less than half of  
what China, the top emitter, manages to do alone.  
So far the EU Emission Trading Scheme (ETS) is  
more or less safe. It is divided into four phases,  
395 and is currently in its second, which will last until  
the start of 2013 – which is when the Kyoto  
Protocol ends. What is going to happen after the  
Kyoto Protocol is exactly what the heads of states  
and officials are going to figure out at the COP15  
climate summit in Copenhagen.

400 Michael Skou Andersen, Professor at the  
University of Århus is a bit wary of the summit  
and is afraid that the outcome might not be  
ambitious enough.

405 “I am not optimistic. I think the outcome will be  
a broad framework agreement, where the EU,  
USA and China go home and make some national  
initiatives. There might be a link between USA  
and the EU, but China is not going to cap the CO<sub>2</sub>  
emission of its industry. And the problem is that  
they need to cap the emission, because it is  
growing rapidly,” the professor explains.

And the world has already started turning its  
gaze on Copenhagen, in anticipation of the  
summit that is taking place from the 7<sup>th</sup> to the 18<sup>th</sup>  
of December this year.

### Big challenges ahead

420 Martin Vorgod, Senior Commodity Trader at  
Danske Bank's investment branch, Danske  
Markets, also see clouds in the future, when it  
comes to the upcoming climate summit in  
Copenhagen, but he is more optimistic than his  
peer Mikael Skou Andersen.

425 “The biggest challenge is to create a global  
platform for the trade with CO<sub>2</sub>. If we continue to  
see a stabilisation of the world economy, it will  
most likely also become easier to swallow an  
agreement for the heads of states to support this  
430 framework,” Martin Vorgod assess. His daily job  
is to council, buy and sell all sorts of commodities  
from metals and grain to CO<sub>2</sub> for the bank's  
largest costumers.

435 "My personal assessment is that we will see some kind of agreement. I don't know how lofty it will be, but one can always hope for high ambitions that will do something about the CO<sub>2</sub> emissions," the commodity trader continues.

440 And this whole CO<sub>2</sub> debate is not just hot air. Though there are many different opinions about whether or not the emission trading is the most effective way of combating global warming, most agree on the ultimate goal.

Top 20 CO <sub>2</sub> emitting countries	
	(Million tonnes)
China	6017.69
United States	5902.75
Russia	1704.36
India	1293.17
Japan	1246.76
Germany	857.60
Canada	614.33
United Kingdom	585.71
South Korea	514.53
Iran	471.48
Italy	468.19
South Africa	443.58
Mexico	435.60
Saudi Arabia	424.08
France	417.75
Australia	417.06
Brazil	377.24
Spain	372.61
Ukraine	328.72
Poland	303.42

*Data comes from the Union of Concerned Scientists.*

445 "If we are to maintain the goal, of a global warming of maximum two degrees Celsius by the end of this century, the CO<sub>2</sub> emission of the world has to start falling within the next two years," Mikael Skou Andersen from the University of Århus warns.

The two-degree goal the professor is referring to, is a goal set forth by the Intergovernmental Panel on Climate Change. The idea is that global warming is to be kept below two degrees Celsius by the end of this century.

#### Neutral hotels

455 At H.C. Andersens Boulevard in the centre of Copenhagen, Hotel Alexandra can be found. By first glance it looks a typical upper class hotel with designer furniture placed in the pastel coloured rooms. Outside a red awning is hanging over the front entrance with the word Hotel written on it. But what few might know is that this hotel has already taken action against climate change and changed its energy supply to renewable energy, and the rest of the CO<sub>2</sub> emission produced by the facilitation of the hotel, is covered by the purchase of CO<sub>2</sub> quotas.

470 "We cannot avoid using electricity, heat and gas, but we can do our part to ensure that it is going on in the most environmentally responsible way possible," Jeppe Mühlhausen, managing director at Hotel Alexandra, says in a press release.

475 And they do not stand alone. Also the competing Hotels owned by the hotel chain, Brøchner Hotels, has taken the next step in the fight against global warming and made all of the chains four hotels CO<sub>2</sub>-neutral. This has been done both by reducing the energy consumption at the hotel, but also by buying CO<sub>2</sub> quotas.

#### Wish for higher ambitions

485 When government officials and heads of states are checking in to hotels scattered all over Copenhagen, for the discussion on how to deal with the successor of the Kyoto Protocol, organisations like Greenpeace will be trying to influence them. If Greenpeace have it their way, the future goals will be a lot more ambitious.

490 "The wealthy countries should take on a goal for 2020, which is at least a 40 percent reduction of the CO<sub>2</sub> emission. 75 percent of the reduction should come from inside the EU and 25 percent should come from projects that reduces the emission of CO<sub>2</sub> outside the EU," Tarjei Haaland, Climate and Energy Staff Member at Greenpeace, says.

500 He explains why it is important for the organisation that the rich countries commit themselves to gathering money for the developing countries in order to help them limit their

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emission and to help them stop the cutting down of forest areas.

505 “No doubt this will add up to some very large amounts, but so far the wealthy countries won't say how much they are willing to spend,” Tarjei Haaland says.

#### **Looking at alternatives**

510 Today Copenhagen is regarded as a green capital, and according to the Mayor for Technics and Environment, Klaus Bondam, more and more cities around the world is getting inspired by the Copenhagen example.

515 In the initial climate plan for the CO<sub>2</sub>-neutral capital, the idea of buying CO<sub>2</sub> quotas was mentioned as part of the way for reducing the carbon dioxide (CO<sub>2</sub>) output of the city.

520 “Initially the purchase of CO<sub>2</sub>-quotas was one of many ways of becoming CO<sub>2</sub>-neutral. However, following a review it has been assessed that it is possible to reach our environmental goal without buying quotas,” the Mayor explains.

525 Instead the city wishes to follow the green path by pursuing renewable energy sources specifically windmills. Copenhagen want to take part in windmill-projects to ensure that the electricity delivered to the city only comes from renewable sources.

530 “By investing in new renewable energy, it is ensured that it really is 'green energy', which both the municipality, the private inhabitants and the business life have the opportunity of buying,” Klaus Bondam ends.

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## 545 **It is cheap to emit**

550 **The CO<sub>2</sub> trading system in the EU is being criticised for several things. One of them is that it is too cheap for the big companies to emit CO<sub>2</sub> and on top of that, the government is giving a lot of free quotas to the companies to cover their CO<sub>2</sub> emission.**

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560 In times where Global warming is on the agenda all over the world, carbon dioxide (CO<sub>2</sub>) has been named as one of the big enemies. To reduce the emission of CO<sub>2</sub>, the EU has introduced the Emission Trading Scheme (ETS) to increase the incentive for the companies to reduce their emissions.

565 The companies have to make sure that CO<sub>2</sub> quotas cover all the CO<sub>2</sub> they emit or they will get fined.

570 "It needs to be cheaper for the companies to do something about their own emission, rather than buying quotas. But if that is to happen, the quotas have to be so expensive that there is good finance in it," Tarjei Haaland, Climate and Energy Staff Member at Greenpeace, says.

575 "The pressure on the companies is way too weak. The more loopholes the companies have available, the easier it is for them to take them and avoid making reductions in their own company. It is obvious that the pressure on the companies shrink the cheaper the quotas are."

580 One of the ways of increasing the incentives could be by making a minimum price for the quotas, Tarjei Haaland adds and notes that the minimum price has to be so high, that the current situation with low fluctuating prices will disappear.

585 Professor in environmental economics from the University of Århus, Mikael Skou Andersen, agrees with Tarjei Haaland, that the incentive for reduction, while the system has its current form, is too low.

590 "As long as the companies get a certain amounts of quotas for free, the quotas are helping lowering the incentive. However, that is going to look different when the EU Emission Trading Scheme

595 (ETS) enters its third phase from 2013, where the free allocation of quotas to the current participating companies, will be phased out," Mikael Skou Andersen says. The first phase was a test phase and the ETS is currently in its second phase, where a number of flaws in the system have been corrected.

600 Mikael Skou Andersens' peer from the Southern University of Denmark, Associate Professor in environmental economics, Per Andersen, looks at it a bit differently.

605 "The companies that are having a hard time reducing their CO<sub>2</sub> emission have an increased incentive to buy quotas rather than reducing emission. Often it can be cheaper for the company to buy quotas," Per Andersen explains.

610 "On the other hand, the companies, which have the possibility of reducing their emission ahead of schedule, can sell their quotas. This gives them an increased financial incentive to make reductions," Per Andersen elaborates.

615 At the moment a CO<sub>2</sub> quota costs a bit more than 15 Euro according to Point Carbon, a world-leading provider of analysis and consulting services for, among other things, carbon dioxide (CO<sub>2</sub>) markets, but less than a year ago the price was twice as high at 30 Euro a quota and back in February this year, it was down to around 8 Euro a quota.

620 "The prices are extremely fluctuating. From 2008 when the ETS entered its second phase, they have been going up and down, which is a big problem," the Mikael Skou Andersen says.

## 630 **Free quotas are leaving**

Critical voices say it is a bad idea to give out free quotas to companies because it doesn't encourage them to take action against their own CO<sub>2</sub> emission.

635 According to a report from the World Wild Fund (WWF), composed by Point Carbon, the electricity producers in Germany, Italy, Spain, UK and Poland have their focus for reducing the emission of CO<sub>2</sub> lowered due to the allocation of free CO<sub>2</sub> quotas.

640 "Providing a free allocation to individual plant that is carbon intensive does reduce the incentives provided by the scheme to invest in low emissions generation technology - thereby off-setting one of

645 the main aims of the scheme,” it is concluded in  
the report. And Greenpeace agrees with that  
conclusion:

650 “I think that everything should be auctioned  
away. If a company emit CO<sub>2</sub> they should pay for  
it. The quotas which the companies get for free  
only mean that they are getting quotas they can  
sell,” Tarjei Haaland from Greenpeace says. The  
free quotas he is referring to, is the quotas, which  
the government receives from the EU and  
655 distributes between the companies subject to the  
ETS.

The WWF report says that the electricity  
producers in Germany, Italy, Spain, UK and  
660 Poland, would get a windfall profit, in the second  
phase of the ETS of between 23 and 71 billion  
Euro in total.

“Windfall profits accrue due to the allocation of  
EUAs to generation free of charge,” the report  
states, but it also explains how this would change  
665 completely if the quotas allocated for free would  
disappear – and they will.

#### Quotas are fading away

670 The critics do not have to wait long, until the free  
quotas at least for the energy sectors, will start to  
disappear. From 2013 the ETS will enter its third  
phase, which means that the free quotas will  
gradually be phased out. However, this only goes  
for the companies, which are already subject to  
675 the ETS in the current phase.

“What is important to DONG Energy is that it is  
the same conditions that go for everyone. A  
system where the free quotas are gradually phased  
out is okay for DONG Energy, as long as the same  
680 goes for our competitors,” Frank Rasmussen,  
Head of Market Trading at DONG Energy, says.

And the phasing out of the free quotas is  
precisely what is needed, if the incentive for  
reducing its own CO<sub>2</sub> emission amongst the  
685 companies is to grow.

“The encouragement for the companies  
improve their emission is lowered, as long as the  
quotas are handed out for free. However, this will  
look different, when the free quotas are being  
690 phased out,” The professor from Århus  
University, Mikael Skou Andersen, explains.

But that is not all that will happen in phase  
three. The size of the ETS will grow and new  
sectors will become a part of the trading system.  
695 The energy intensive industries will be phased in

and become part of the EU CO<sub>2</sub> trading system  
just like air transportation will. Expectations for  
other industries being forced to joining, are  
definitely also there. Mikael Skou Andersen  
700 mentions the shipping industry as a possible  
sector that might be incorporated into the ETS.

#### Effect is yet to come

705 At the moment there is little reaction from the  
companies that has to buy CO<sub>2</sub> quotas. In 2008  
DONG Energy used 42 million Danish Kr., on  
CO<sub>2</sub> quotas, but compared to its total revenue of  
60 billion Danish Kr. it is not a whole lot.

#### They believe that...

Martin Vørgod: We will see an increase in the  
price of CO<sub>2</sub> quotas and more sectors will join  
the EU Emission Trading Scheme

Mikael Skou Andersen: The Heads of state  
and state officials will only be able to agree on  
a broad framework agreement at COP15

Per Andersen: More sectors will join the ETS.  
The sectors that is easy to regulate, like  
transportation on road will join within the next  
five years.

Tarjei Haaland: There ought to be a minimum  
price for CO<sub>2</sub> quotas and that the free quotas  
given away by the government should be  
removed.

DONG Energy: The ETS has been a big  
success because it has increased the focus on  
cost efficient CO<sub>2</sub> reductions in- and outside  
the EU.

Dan Jørgensen: Believes that CO<sub>2</sub> credits take  
up way too much space in the overall picture,  
which is part of the reason why the quota  
prices are fairly low.

710 Mikael Skou Andersen from Århus University  
assess that it depends on the company and  
whether or not they are expanding their  
production.

715 “I think the CO<sub>2</sub> quotas mainly have an  
influence on the companies that wish to expand  
their production. It is going to be expensive if a  
company has to buy new quotas. The entire CO<sub>2</sub>  
emission from new production has to be covered  
by newly acquired quotas, since this is not  
720 covered by the free quotas they get from the

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government.”

725 This means that companies that expand their production has to acquire a lot of new quotas or reduce their CO<sub>2</sub> emission a lot, while a company that is just lying low with no expansion plans isn't going to be affected that much.

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## How the CO<sub>2</sub> quota works

735 **Everyone is talking about CO<sub>2</sub> and its effect on the global warming. In Europe companies have been subject to a quota system for several years, but the quota system is so complex that few people actually understand what it is all about.**

740 By Jesper Rolin

745 We have all heard about these CO<sub>2</sub> quotas, or certificates as they are also called, but very few of us have actually seen one. But the thing is, there is not a whole lot to see. A CO<sub>2</sub> quota is nothing more than a sanction to emit one ton of carbon dioxide (CO<sub>2</sub>) out into the air.

750 Naturally these quotas are not aimed at private citizens, but rather the large companies that are emitting millions and millions of tonnes of CO<sub>2</sub> every year.

In short the CO<sub>2</sub> quota system works like this:

755 The European Commission has made a cap on how much CO<sub>2</sub> certain sectors in the EU are allowed to emit. The member states get a certain amounts of CO<sub>2</sub> quotas, which they are allowed to hand out to the most energy consuming industries. If these companies emit more CO<sub>2</sub> than they have quotas for, they have to acquire new allowances or pay a fine for every tonnes they emit over what they have CO<sub>2</sub> quotas for.

### Take action or pay the price

765 A CO<sub>2</sub> quota was originally meant for large enterprises with high CO<sub>2</sub> emissions. The quota system was originally designed to be a way to increase the incentive for reducing the emission. The local government would get a certain amount of CO<sub>2</sub> quotas based on the CO<sub>2</sub> emission for the country, the government could then hand them out to those companies, which were under the Emission Trading Scheme (ETS).

775 To make sure the companies would reduce the emission they would only get quotas for a certain percentage of their CO<sub>2</sub> emission. This means that if the company didn't take action and made sure to reduce the CO<sub>2</sub> emitted into the air, it would either have to buy some quotas so the overall CO<sub>2</sub>

780 emission would be covered, start up CO<sub>2</sub> reducing projects in other countries or pay a fine for every tonnes that were emitted over the company's total license.

785 When ever a company successfully manages to reduce its CO<sub>2</sub> emission and thereby makes sure to be under its allowed emission cap, it can sell the rest of its quotas to another company, which did not manage to reduce its emission sufficiently.

### 790 Not for everyone

At the moment it is not all sectors, which are subject to the ETS. Currently it is only the heaviest emitters that need to cap their emission. The sinners include combustion plants, oil refineries, coke ovens, iron and steel plants, and factories making cement, glass, lime, brick, ceramics, pulp and paper. According to figures from the EU it adds up to more than 11,500 energy intensive installations, which have to keep an eye on the emission of CO<sub>2</sub>. All together they make up for around 40 percent of the total emission in the EU.

800 According to the Danish Energy Agency, there are currently only 230 Danish companies that are part of the CO<sub>2</sub> trading system. Examples of these companies can be DONG Energy, Danisco and Novo Nordic.

805 "The electricity producers are without any doubt the biggest players on the field, when it comes to trading with CO<sub>2</sub> quotas. They have to be net-buyers to live up to their quota," says Martin Vorgod, Senior Commodity Trader from Danske Banks investment branch, Danske Markets, who's daily job consists of counselling and buying commodities spanning from metals to CO<sub>2</sub> for the bank's largest costumers.

### Price dependency

820 The price of the quota is highly influenced by the prices of other commodities, such as oil, natural gas and coal.

825 The electricity producers that need the quotas to offset the CO<sub>2</sub> emission from the power plants buy the vast majority of the CO<sub>2</sub> quotas. When they want to make electricity, they can choose to use the cheap, but highly polluting, coal and oil or the expensive and less polluting natural gas. If it is too expensive for the company to buy natural gas, they have to use coal, which means that they emit more CO<sub>2</sub>, and have to buy more CO<sub>2</sub> quotas, or find alternative ways to reduce their

emissions.

835 “There is a close link between high growth and high production. For high production the producers need commodities like oil. The more commodities and oil they use the more CO<sub>2</sub> they emit,” Martin Vorgod explains.

840 Currently the EU Emission Trading Scheme is by far the biggest of its kind, and its main purpose is to make sure that the EU reaches its Kyoto

#### Important years for the ETS

1997: The Kyoto protocol is signed and the signing countries commit themselves to a reduction of the CO<sub>2</sub> emission between 6 and 8 percent in the period 2008-2012 compared to the level in 1990

2005: The EU Emission Trading Scheme (ETS) is started up as a test phase that lasts until January 1. 2008. Around 11,500 European companies becomes subject to the quota system.

2008: The ETS enters its second phase, which lasts until January 1. 2013. The amount of quotas given out for free is cut down, which starts an actual trading market with CO<sub>2</sub> quotas.

2009: COP15, the climate summit in Copenhagen in December, where a successor for the Kyoto protocol is to be found.

2013: The ETS enters its third phase, which means that several new sectors, such as aviation, will be incorporated. The third phase also means that the free quotas handed out to the highly energy consuming industries, such as electricity production, will be phased out and gradually replaced by trading.

2021: Phase three of the ETS will start and last until 2028. Plans for this period are still very uncertain.

845 obligations of an 8 percent CO<sub>2</sub> emission reduction from 1990 levels by 2012. It is however possible to find a few places outside the EU, where trade with CO<sub>2</sub> quotas also take place.

#### CO<sub>2</sub> is a commodity

850 When the companies wish to buy or sell quotas it works somewhat like on the stock market. They need to find an exchange that deals with this specific commodity. They can then choose to sell or buy their quotas if they find the price

favourable.

855 Since the CO<sub>2</sub> quotas are available on various exchanges, which work under free market conditions, the price is naturally also dependent on the demand at the industries. This means that if the electricity producing companies have to produce a lot of electricity, then they also have to buy a lot of quotas. This will lead to an increase in the quota price. However, if the consumers chose to cut down on the consumption of electricity, the CO<sub>2</sub> emission will fall and the companies does not have to buy as many quotas, which will lead to a fall in the quota price.

865 CO<sub>2</sub> quotas are traded much like copper, oil, corn and any other commodity. It is bought as the thing called a 'future', which is a date for delivery. For example when a company buys a December 2010 'future' for oil, this means that the oil is going to be delivered in December 2010. But since CO<sub>2</sub> is of a different nature than other commodities, you will not get anything delivered, but you have a right to emit a certain amount of CO<sub>2</sub> depending on how many quotas you have bought.

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