

## *Chapter Three*

# The European Carbon Trading System after 2012— Implications to the U.S.

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The effects of climate change are undoubtedly real. Much has been said and disputed about how to “environmentally” tackle problems arising from the effects of global warming as well. As it is not the aim of this chapter to discuss the possible environmental implications of these issues and to contribute to those ongoing discussions, it should suffice to show briefly how greenhouse gases contribute to global warming.

The contribution of greenhouse gases to global warming.<sup>1</sup>

Type of gases	Contribution to global warming in %
Dinitrogen-oxide	6
CO <sub>2</sub>	55
Freon	24
Methane	15

Environmental regulation could target Pareto efficiency—maximizing net benefits (while minimizing costs)—or maximize cost-efficiency (trying to achieve a given level of environmental protection while pushing down the costs of regulation). There are several other factors that might be taken into account: information sharing, overall effectiveness, equity, monitoring and social effects. Emission trading is only one instrument by which actual benefits might be able to be gained after 2012.

In this chapter I will focus on how a certain approach that was designed to tackle these challenges has been designed in Europe and

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<sup>1</sup> Cs. Pánczél, *Pénz- és tőkepiacai eszközök a klímaváltozás mérséklésére*, 2009. [http://elib.kkf.hu/edip/D\\_14877.pdf](http://elib.kkf.hu/edip/D_14877.pdf), accessed on August 23, 2011.

how it will change after 2012, when the first results of the Kyoto undertakings should appear at the global level.

### **Emissions Trading from an Economic Point of View**

Economically effective goals should be defined in the field of climate protection. There is a need to find the method of conditioning that leads to the most expense-efficient achievement. In 2003 Stern observed the global effects of climate change by its probable economic aspects.<sup>2</sup> He pointed out that—economically—the advantages of firm and early actions are more considerable than the likely costs. He underlined that the poorest countries with weak economic structures are more exposed to the negative effects of climate change than others. Similarly, developing countries are definitely at a disadvantage, even though their CO<sub>2</sub> emission is much lower compared to some countries with developed economic structure.<sup>3</sup> Yet, to the contrary, certain countries (e.g. Russia, Canada and the Scandinavian Peninsula, Hungary) could even profit from some degree of global warming, because one of the probable consequences of global warming is that the agricultural output of these countries might increase.<sup>4</sup>

A special program, the so-called “system of distributable emission quotas” (the cap and trade system), assures in general the quantity of the pollution allowed by the authority (or a given international contract), that is to say a system like this is appropriate for the goals of environmental protection. As for the economic side of the system, it is important to emphasize that the related costs are unclear because the price of the quotas is determined by the market, therefore the price of the quotas (and the opportunity cost of the quotas) can change within a wide interval. Practically, the result is that carbon emissions become

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<sup>2</sup> The Stern Review on the Economics of Climate Change, 2006, accessible here: [http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/d/Transport\\_annex.pdf](http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/d/Transport_annex.pdf), accessed on September 10, 2011.

<sup>3</sup> For a commentary on the review by the author, see: N. Stern, “What is the Economics of Climate Change?” *World Economics*, Vol 7, No 3, April-June 2006, pp. 1-10.

<sup>4</sup> Cs. Pánczél, *Pénz- és tőkepiacai eszközök a klímaváltozás mérséklésére*, 2009. [http://elib.kkf.hu/edip/D\\_14877.pdf](http://elib.kkf.hu/edip/D_14877.pdf), accessed on August 23, 2011.

new agents of production for the stakeholders, just like funds, manpower, land and other natural resources.

The emissions trading system established by the European Union (EU ETS) is also a cap-and-trade system, i.e. a trading scheme of fixed total quotas: the quantity of total emissions is *ex ante* fixed and the stakeholders are allowed to sell or buy emission units within this limit. One unit allows the emission of 1 tonne of CO<sub>2</sub>. The word “cap” means the limit value, while “trade” refers to free trading within the limit value.<sup>5</sup>

The European ETS was launched after a series of long international negotiations in 2005 concerning the means for dealing with climate change. This process—as it is not the subject of this study—can be presented briefly as follows:

- After a long conciliation period, in June 1992 the United Nations Conference on Environment and Development (UNCED) was organized in Rio de Janeiro, in which more than 117 countries participated. At the Conference the United Nations Framework Convention on Climate Change—UNFCCC was signed. The Convention came into effect in March 1994.
- In 1998 the UNEP (United Nations Environment Programme—Environmental Protection Programme of the UN) and the WMO (World Meteorological Organisation) established the International Climate Change Partnership (ICCP), the aim of which was to overview and interpret observed data, and to conduct modelling and effect analysis.
- A substantial number of UN member states signed the Kyoto Protocol, in force for the period 2008-2012. The protocol aims at reducing—via national measures—greenhouse gas emissions by 5.2%.<sup>6</sup> The costs of the commitments were attempted to be reduced by including three flexible mecha-

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<sup>5</sup> Emissions Trading Scheme (EU ETS), official site of the European Commission, 15 November 2010, [http://ec.europa.eu/clima/policies/ets/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/index_en.htm), accessed on August 23, 2011.

<sup>6</sup> February 16, 2005: The Kyoto Protocol came into effect without the participation of the United States.

nisms, centrally stimulating sustainable development through investments and, where possible, technology transfers. The mechanisms are: the clean development mechanism (CDM), the joint implementation plan (JI) and emissions trading (ET). The latter two are project-based mechanisms.

- The member states of the European Union affirmed the Kyoto Protocol on 31 May 2002.<sup>7</sup> Directive 2003/87/EC set up the EU Emissions Trading System (ETS)<sup>8</sup> that identified the emitters to be regulated.<sup>9</sup> The ETS was finally launched in January 2005. Then, in October 2005 the second European Climate Change Programme (ECCP II) was launched. In 2007 the European Commission presented the Energy and Climate Change Programme and made a proposal to reduce greenhouse gases by 20% compared to the level of 1990. The goal of the two ECCPs was to identify and develop all the essential elements of an EU strategy to implement the Kyoto Protocol.<sup>10</sup> The second ECCP tried to match the Lisbon goals of the EU—more stable economic growth and more jobs—with the exploration of cost-effective options for reducing greenhouse gas emissions.<sup>11</sup>

<sup>7</sup> Beliczay, Szabó, *Az éghajlatvédelem gazdasági eszközei—Az emisszió-kereskedelem* (Budapest: Levegő Munkacsoport, 2003).

<sup>8</sup> European Emissions Trading System. Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. OJ L 275, 25.10.2003., pp. 32-46.

<sup>9</sup> Directive 2004/101/EC modified Directive 2003/87/EC. (see: Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms, OJ L 338, 13.11.2004, pp. 18-23).

<sup>10</sup>See further: [http://ec.europa.eu/clima/policies/eccp/index\\_en.htm](http://ec.europa.eu/clima/policies/eccp/index_en.htm), accessed on September 28, 2011.

<sup>11</sup>See further the European Commission's site for the ECCPs: [http://ec.europa.eu/clima/policies/eccp/second\\_en.htm](http://ec.europa.eu/clima/policies/eccp/second_en.htm), accessed on September 28, 2011.

## The 1997 Kyoto Protocol

The Kyoto Protocol represented an important step forward in the effort to tackle climate change; it includes binding, quantified objectives for limiting and reducing greenhouse gases. The main focus of the Protocol is to decrease carbon dioxide emissions.<sup>12</sup>

The parties that signed the Protocol committed themselves to comply with the policies and measures defined in the Protocol, including:

- raising energy efficiency concerning certain branches of economy;
- supporting sustainable agriculture;
- introducing measures which aim at reducing emission in the transportation sectors;
- supporting the application of renewable energy sources and environment-friendly technologies.

In total, 38 industrialized countries and countries in transition undertook the reduction of emission by 5.2% for the period of 2008-2012.<sup>13</sup> Among the larger industrialized countries, only the U.S. did not participate.

The Protocol tackles the emissions of the following six gases: carbon dioxide, methane, nitrous oxide, hydro fluorocarbon, per fluorocarbon and sulphur hexafluoride. The denomination of the last three compounds by the Protocol is significant because their atmospheric presence is of especially long duration. The commitments concerning the emission regulation of the involved countries are valid for all these six gases in a way that the emission changes of these gases can be defined with the global warming potential (GWP), the relative measure of how much heat a greenhouse gas traps in the atmosphere.

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<sup>12</sup>For a more detailed overview, see e.g.: Grubb et al, *The Kyoto Protocol, a Guide and Assessment*. Energy and Environmental Programme, RIIA, 1999. For a more in-depth analysis on the compliance costs, see e.g.: A. S. Manne et R. Richels, *The Kyoto Protocol: A Cost-Effective Strategy for Meeting Environmental Objectives?*, (Stanford: Stanford University, 1998).

<sup>13</sup>For the EU, this number is 8%, with Poland and Hungary being exempt. They have to reduce their emissions only by 6%. Malta and Cyprus are not party to Annex I of the Protocol.

The countries agreed to the emissions limitation and reduction in the percent of base level defined in the Protocol. According to this agreement, for certain countries the commitment means emissions limitation (e.g. Norway, Iceland, Australia), other countries are only committed to retain the emission level (e.g. Russia, Ukraine, New Zealand), while other countries are committed to reduce the emission by 5-8%.

The EU ratified the Kyoto Protocol in May 2002 and the member states of the European Union defined 8% as the value of emissions reductions, but then they set different emissions regulation levels for themselves. They agreed that they must achieve the undertaken commitments together, so slight deviations in the national quotas are accepted.<sup>14</sup>

It remains to be seen, however, how the targets are to be implemented and how it is possible to enforce the undertakings by the parties effectively.

## The Story of EU Emissions Trading Regulations

Regulations on the subject of the European CO<sub>2</sub> trading may be divided into three phases.<sup>15</sup> The first steps were taken before 2000. These actions aimed at preventing and reducing climate change at the global level. In December 1997 governments signed the Kyoto Protocol, which legally obliged them to reduce the emission of greenhouse gases. In 1998, the EU differentiated the 8% target between the different member states in the so-called EU Burden-Sharing Agreement.<sup>16</sup> The idea behind this agreement was that the “upcoming member states”—Spain, Portugal, Greece—were given leeway to

<sup>14</sup>Beliczay– Szabó, *Az éghajlatvédelem gazdasági eszközei—Az emisszió-kereskedelem*. Levélgő Munkacsoport, Budapest, 2003.

<sup>15</sup>On emissions trading in the EU, see e.g.: Grubb *et Neuhoff*, *Allocation and competitiveness in the EU emissions trading scheme: policy overview*. Climate Policy, Vol 6, No. 1., pp. 7-30; Klepper *et Peterson*, *The EU Emissions Trading Scheme. Allowance Prices, Trade Flows, Competitiveness Effects*. FEEM Working Paper No. 49.04.

<sup>16</sup>On how Burden Sharing works in the EU, see: S. Dessai *et A. Michaelowa*, “Burden sharing and cohesion countries in European Climate Policy: the Portuguese example.” *Climate Policy* I (2001), pp. 327-341.

slightly increase their emissions, while richer member states would compensate for it. In parallel, in June 2000 the European Commission launched the first European Climate Change Programme (ECCP I).<sup>17</sup> The major goal of the ECCP I was to help EU member states achieve the Kyoto undertakings.<sup>18</sup> It is worth noting that the EU ETS was a result of the consultative process in the ECCP I working groups.

While the Kyoto Protocol was ratified by the EU in 2002, due to a lack of signatories it only entered into force in February 2005.<sup>19</sup> In 2005, the European Commission launched the second European Climate Change Programme (ECCP II).<sup>20</sup> The main task of ECCP II was to facilitate the genuine implementation of the priorities identified in the first program.

In March 2007, the Council authorized a proposal that the EU take a one-sided commitment to reduce emission by 20% by 2020. In March 2010, a new EU summit was organized to ratify the new energy action plan to come into force in 2010.

Table 1 shows the burden sharing within the EU.<sup>21</sup>

The European Commission evaluated the CO<sub>2</sub> emission of the member states to be 3457 Mt for 2010.<sup>22</sup>

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<sup>17</sup>The ECCP is a multi stakeholder consultative program, bringing together various interests and expertise. It works in working groups forming forums from a range of policy sectors, industries and implementing hubs.

<sup>18</sup>The program was streamlined with the main EU strategy environmental program, the 6th Environmental Framework Programme (2002-2012).

<sup>19</sup>The European Union assumes an obligation according to the Protocol to reduce the emission of greenhouse gases of the year 1990 by average 8% by the time of 2008-2012. By applying the method of bubble mechanism and burden sharing the EU gained right to redistribute the committed 8% among the Member States because it signed the Protocol as an independent contractor.

<sup>20</sup>See the Commission's site: [http://ec.europa.eu/clima/policies/eccp/second\\_en.htm](http://ec.europa.eu/clima/policies/eccp/second_en.htm).

<sup>21</sup>2002/358/EC: Council Decision of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the UNFCCC and the joint fulfilment of commitments hereunder. OJ L 130, 15.5.2002., 1-3.

<sup>22</sup>Communication from the Commission to the Council and the European Parliament—A Community strategy to promote combined heat and power (CHP) and to dismantle barriers to its development, COM(97) 514 final, <http://www.resource-saver.com/file/toolmanager/O105UF456.pdf>, accessed on August 23, 2011.

**Table 1. The reduction of emission assumed in the Kyoto Protocol (% emissions of 1990 level in 15 member states of the European Union)**

Belgium	92.5
Denmark	79
Germany	79
Greece	125
Spain	115
France	100
Ireland	113
Italy	93.5
Luxembourg	72
Holland	94
Austria	87
Portugal	127
Finland	100
Sweden	104
United Kingdom	87.5
European Union	92

*The 2003/87/EC Directive*

At the outset, and during the discussion in Kyoto, the EU refused to accept the emission quota trading system, but later radically modified its position. In 2001 the European Commission adopted a directive on the subject of the obligatory trading system of greenhouse gases. After the European Parliament's amendments in 2003, the EU legislation resulted in the above act.<sup>23</sup> Briefly, the directive defines the upper limit of emissions, sets out the theory of free assignment for most emissions, prescribes obligatory participation by the parties concerned, and assures legal enforcement of the derogations and fines for those who do not meet requirements.<sup>24</sup>

<sup>23</sup>For a more extensive assessment of the directive, see e.g.: J. Wettestad, "The Making of the 2003 EU Emissions Trading Directive: An Ultra-Quick Process due to Entrepreneurial Proficiency?" *Global Environmental Politics*, Volume 5, Number 1, February 2005, pp. 1-23.

<sup>24</sup>Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. OJ L 275, 25.10.2003., pp. 32-46.

**Table 2. Emission Permit vs. Emission Quota**

<b>Emission permit</b>	<b>Emission quota</b>
<i>Permit</i>	<i>Allowance</i>
To the site, registered to the company	1t CO <sub>2</sub> emission
Not negotiable	Negotiable
The company cannot work without this	The licensee cannot emit CO <sub>2</sub> without it
It contains monitoring, return and certification fee	Standardized definition in the European Union
It obliges the licensee to present the same quantity of quotas in accordance with the annual CO <sub>2</sub> emission	All EU member states are obliged to accept
It does not contain emissions limit value	Any legal or natural person can buy it
	It is launched and can be cancelled by a national authority
	It has to be registered in a national register <sup>26</sup>

The directive at first was limited to CO<sub>2</sub> emissions, but later in 2004—and then again in 2006—the Commission proposed the extension of the directive to all greenhouse gases identified in the Kyoto Protocol. In addition, the directive obliged the member states to ensure greenhouse gas emissions permits for a certain group of companies, which permits each licensee the quantity of emission quotas in accordance with their greenhouse gas emissions. The emissions permit was a commitment and right for the given companies to trade and exercise accordingly. The permit also authorised the licensee to benefit from the emission quotas defined by the country. The emissions permit was not negotiable; it applied to the specified site and/or company. The emissions quota was a voucher with which the emitter could certify to the authorities.<sup>25</sup> Table 2 shows the difference between emission permit and emission quota.

The member states had to prepare an allocation plan before the period of trading ratified by the Commission. The plan had to contain the total quantity of quotas and the way in which the quota will be dis-

<sup>25</sup>Lesi– Pál, *A széndioxid emisszió kereskedelem elméleti alapjai és Európai Unió szabályozása*, PM Kutatási Fejezetek 11. szám, 2005, <http://www.rekk.eu/images/stories/letoltheto/pm-11.pdf?14c7e2ee2520855d5ac98ec049c29945=jwrvoavs>, accessed on August 23, 2011.

<sup>26</sup>Ibid.

tributed. During the first regulation period the member state could auction 5% of the quotas to the companies. In the second (Kyoto) period this proportion was raised to 10%. New entrants were treated specially, through a reserve system. To track emissions allowances, each member state had to have its own national allowance registry. It was also possible to team up to combine registries. To harmonize monitoring, the Commission would operate a computerized independent transaction log that served as a centralized clearinghouse to verify allowance transfers between national registries.<sup>27</sup>

The total quantity of quotas was to be commensurable to the quantity assumed by the country in the Kyoto Protocol.

A portion of this national target had to be assigned to the installations participating in the EU ETS, with the remainder of the national target available for emissions outside the EU ETS. As Kruger and Pizer (2004) explained, this suggested a three-step process. “First, Member States must decide how much of their allowable Kyoto emissions will be assigned to the sectors included in the EU ETS [...]. Next, Member States may devolve this national ETS target into targets for each of the sectors included in the program. Finally, national program administrators must develop methodologies to allocate these sectoral targets to individual installations.”<sup>28</sup>

If the licensee emitted more quotas than allowed, the penalty was €40 per tonnes exceeded during the first period, which rose to €100 per tonnes during the second. The missing quantity of quotas (that was not given to the authority) had to be compensated the following year. It is worth noting that monitoring was not enforced strongly as member states could decide about fraudulent reporting, late reporting, etc.

The ETS was the first trading system that allowed the trading with emission rights between countries. The countries divided the maximum emission value defined at national level into free tradable units, which were to be sold or rented to certain companies. Hypothetically, the quota market could emerge if the degree of emissions is higher than the

<sup>27</sup>See also: Kruger *et Pizer*, *The EU Emissions Trading Directive: Opportunities and Potential Pitfalls*. Discussion Paper 04-24, Resources for the Future, 2004, p. 5.

<sup>28</sup>Kruger *et Pizer*, *The EU Emissions Trading Directive: Opportunities and Potential Pitfalls*. Discussion Paper 04-24, Resources for the Future, 2004, p. 4.

one defined in advance. This way those countries that emit more greenhouse gases can buy these units from those that emit less. We should note that there is a possibility of emissions trading between companies within countries, but between countries and countries as well.<sup>29</sup>

Directive 2003/87/EC also set out the possibility of linking trading schemes with parties that have ratified the Kyoto Protocol. Countries that link with the EU ETS will have their allowances recognized in the EU system on the basis of a bilateral agreement between the European Union and that country. With this many issues were raised, of which up until now not many were resolved.

### ***The EU ETS***

The EU ETS (European Union Emissions Trading System) is an emissions trading scheme established by the European Union, which aims to offer incentives to reduce emissions of greenhouse gases economically.<sup>30</sup> Within this system heavy duty cars, oil refineries, coke ovens, metallurgic and steel plants, cement and lime-kilns, glass and building material factories and paper-mills can emit CO<sub>2</sub> only with permission.<sup>31</sup>

Initially the scheme involved some 11,000 industries that account for approximately 40% of greenhouse gas emission of the EU. Member states defined the quotas in the National Allocation Plans. One emissions unit was equal to 1 tonne of CO<sub>2</sub>. Beside this, the so-called Effort Sharing (ES) system was established that controls the industry sectors, which produce lower level of emissions, e.g. transportation, building industry, agriculture and waste industry and furthermore the small emitters like households, small and medium sized companies and the ones from the supply sector. These “leftovers” would produce

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<sup>29</sup>See also in: J. Lindmayer, *Emisszió kereskedelem a koppenhágai klímakonferencia tükrében*, 12 January 2010, <http://www.biztonsagpolitika.hu/?id=16&aid=820&title=emisszio-kereskedelem-a-koppenhagai-klimakonferencia-tukreben>, accessed on August 23, 2011.

<sup>30</sup>For an evaluation of the ETS, see, e.g.: Ellerman-Kuchner, „The European Union Emissions Trading Scheme: Origins, Allocation, and Early Results,” *Review of environmental economics and policy*, Vol 1, No 1, 2007, pp. 66-88.

<sup>31</sup>See also: D. Fazekas, *Szén-dioxid piac az Európai Unió új tagállamaiban*, PhD study, Budapest, 2009, [http://phd.lib.uni-corvinus.hu/415/3/fazekas\\_dora\\_thu.pdf](http://phd.lib.uni-corvinus.hu/415/3/fazekas_dora_thu.pdf), accessed on August 23, 2011.

some 55% of emission of the European Union.<sup>32</sup> As one of the most significant changes, part of these sectors will become a component of the ETS in the third trading period.

In the first two trading periods (2005–2012) the main part of the emission units were allocated free of charge to the companies. At the beginning of the third trading period, on 1 January 2013 the ETS system changes significantly. The rules become more aligned; and the way the system works becomes more computable.<sup>33</sup>

Table 3 shows the ETS emission units of each member state in the period of 2005–2012.

As already mentioned, EU member states assumed a commitment to reduce the emission of greenhouse gases by 8%. Later this common aim was transformed into national goals in the 2002/358/EC Council Decision. Only the national commitments apply to the 12 states that joined the European Union between 2004 and 2007 (except Cyprus and Malta, to whom these kinds of commitments were not applied).

The ETS now operates in the 27 EU member states plus Iceland, Liechtenstein and Norway. It covers a large quantity of CO<sub>2</sub> emissions from various installations such as power stations, combustion plants, oil refineries and iron and steel works. Newcomers are factories making cement, glass, lime, bricks, ceramics, pulp, paper and board. Nitrous oxide emissions from certain processes are now covered as well.<sup>34</sup>

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<sup>32</sup>See also in: J. Lindmayer, *Emisszió kereskedelem a koppenhágai klímakonferencia tükrében*, 12 January 2010, <http://www.biztonsagpolitika.hu/?id=16&aid=820&title=emisszio-kereskedelem-a-koppenhagai-klimakonferencia-tukreben> (23 August 2011).

<sup>33</sup>The EU against the climate changes—The emission trading system of the EU, European Communities, 2009, [http://ec.europa.eu/clima/publications/docs/ets\\_hu.pdf](http://ec.europa.eu/clima/publications/docs/ets_hu.pdf), accessed on August 23, 2011.

<sup>34</sup>There is a vast number of analyses about the ETS. To understand the economics behind it, see, e.g.: Neuhoff *et al.*, *Allocation, incentives and distortions: the impact of EU ETS emissions allowance allocations to the electricity sector*, 19 May 2006. Available at: <http://www.dsplace.cam.ac.uk/bitstream/1810/183627/1/eprg0618.pdf>, accessed on September 30, 2011.

**Table 3. ETS Emission Units of Each Member State, 2005–2012.**

Country	Kyoto target value (% change)	2005-2007		2008-2012	
		Allocated CO <sub>2</sub> emission unit (mton/year)	Share from the ETS (%)	Allocated CO <sub>2</sub> emission unit (mton/year)	Share from the ETS (%)
Austria*	-13	33.0	1.4	32.3	1.5
Belgium*	-7.5	62.1	2.7	58.0	2.8
Bulgaria	-8	42.3	1.8	42.3	2.0
Cyprus	-	5.7	0.2	5.2	0.3
Czech Republic	-8	97.6	4.2	86.7	4.2
Denmark*	+21	33.5	1.4	24.5	1.2
Estonia	-8	19	0.8	11.8	0.6
Finland*	0	45.5	2.0	37.6	1.8
French*	0	156.5	6.8	132.0	6.3
Germany*	-21	499	21.7	451.5	21.6
Greece*	+25	74.4	3.2	68.3	3.3
Hungary	-6	31.3	1.4	19.5	0.9
Ireland*	+13	22.3	1.0	22.3	1.1
Italy*	-6.5	223.1	9.7	201.6	9.7
Latvia	-6	4.6	0.2	3.4	0.2
Lithuania	-8	12.3	0.5	8.6	0.4
Luxembourg*	-28	3.4	0.1	2.5	0.1
Malta	-	2.9	0.1	2.1	0.1
Netherlands*	-6	95.3	4.1	86.3	4.1
Poland	-6	239.1	10.4	205.7	9.9
Portugal*	+27	38.9	1.7	34.8	1.7
Romania	-8	74.5	3.2	73.2	3.5
Slovakia	-8	30.5	1.3	32.5	1.6
Slovenia	-8	8.8	0.4	8.3	0.4
Spain*	+15	174.4	7.6	152.2	7.3
Sweden*	+4	22.9	1.0	22.4	1.1
United Kingdom*	-12	245.3	10.7	246.6	11.8
Liechtenstein	-8			0.2	0.0
Norway	+1			15.6	0.7
<b>Total</b>		<b>2298.5</b>	<b>100 %</b>	<b>2086.5</b>	<b>100 %</b>

\* indicates the states that actually made commitments.

## Effects of the Third Trading Period (ETS after 2012)

The Kyoto Protocol was affirmed by 176 countries plus the EU, and finally came into effect in February 2005.<sup>35</sup> Different values are applied to the parties in the different annexes but the general aim for the period of 2008–2012 is to reduce CO<sub>2</sub> emission by 5% in relation to the greenhouse gas emission level of 1990.

Because at the outset trading covered only approximately 40% of greenhouse gases, EU CO<sub>2</sub> trading was supposed to increase and become more heterogeneous over time. Since 2005 the ETS has enlarged—with the entry of further countries and the emergence of the so-called gas specific option (joining the ETS of coal-burning power plants of efficiency lower than N<sub>2</sub>O and 20MW)<sup>36</sup>—and the Commission and the Member States have decided that for the start of the third trading period in 2013 there is a need for clearer rules and better functioning trading market for the effective reduction of emissions.

### *The Third Period of Emissions Trading in the EU (2013–2021)/ The New Emissions Trading Constitution: Directive 2009/29/EC*

According to the directive that reformed EU emissions trading in 2009, emissions units launched after January 1, 2013 are valid for eight years. From 2013, the quantity of annual emissions units in the EU will be reduced in a linear fashion in accordance with the safety decisions taken concerning the ratified national allocation plans between 2008 and 2012, and as compared to the average annual emissions units of the member states—in line with a 1.74% linear value.<sup>37</sup>

According to the new rules, in the third period there will be no strongly heterogeneous national distribution plans: the Commission will control an integrated European quota distribution system. This means that the EU enforcer will help to set up and closely monitor how the distributions of allowances proceed in the member states.

<sup>35</sup>The United States has not signed the Protocol.

<sup>36</sup>See also MIT Interim Report, *The European Carbon Market in Action: Lessons from the First Trading Period*, Report No. 162, June 2008, p. 22.

<sup>37</sup>Article 9, Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, OJ L 140, 5.6.2009, pp. 63–87.

Another new element of the third trading period is that the ETS will encompass new industries: among others,<sup>38</sup> glass and porcelain manufacturers and the aluminium and ammonium manufacturers become part of the system.

In keeping with the new national reporting system, the Commission can use the available information to propose the monitoring of the whole trading system to the Council and the Parliament, to better clarify and understand the carbon market.

The overall aim of the allocation of quotas—with the modification of numerous details—concerning the trading period starting from January 1, 2013, is the effective evaluation of environmental protection activities, appreciation of the investments of companies in more efficient emission, and the reduction of environmental pollution by retaining European competitiveness.

By 2020 the EU intends to reduce the emission of greenhouse gases by 20% compared to the level of 1990. As part of this aim, the Commission is constantly monitoring the developments in this field and as one of the last actions; it launched a public consultation on further reducing industrial gas emissions of fluorinated gases in September 2011.<sup>39</sup>

As the Directive only sets targets at the EU level, the Member States will have to implement the regulations of the directive in national legislation by December 13, 2012.

### *Air Transport: A Newcomer to the European Trading Scheme*

Taking into consideration all modes of transportation, airplanes emit the most carbon dioxide. According to the Stern Review, this sub-sector produces 12% of the total emissions in the transportation sector,<sup>40</sup> significantly after road transport (78%).<sup>41</sup> The Commission

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<sup>38</sup>The detailed list of the new activities can be found in directive 2009/29/EC, appendix I.

<sup>39</sup>See for further details: IP/11/1078, at: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1078>.

<sup>40</sup>Annex 7.c, *Stern Review on the Economics of Climate Change*, 2006, See: [http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/d/Transport\\_annex.pdf](http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/d/Transport_annex.pdf).

<sup>41</sup>According to the review, the fact that air transportation was the most developing

estimates that an aircraft doing a return flight between Brussels and New York generates about 800 kg of CO<sub>2</sub> per passenger. Furthermore, air traffic represents around 10% of greenhouse gas emissions covered by the EU ETS.<sup>42</sup>

In 2005, when the first ETS trading period started, none of the 11,000 companies was dealing with air transportation. The second trading period—according to the original plan of the Commission—contained the quotas allocated for treatment of emission coming from air transportation: from 2011 for the airlines within the EU, from 2012 for the international lines as well. According to the proposal adopted in January 2009,<sup>43</sup> from 2012 companies participating in European air transportation have to reduce emission to 97% of the level of 2005, then from 2013 to 95% of the latter.<sup>44</sup> The commitment applies to all national and international aviation emission of CO<sub>2</sub>: airplanes entering European airspace have to buy ETS credits for the whole distance, not only for passage in Europe.

According to the rules, 15% of the aviation emissions units have to be allocated via auction. As is stated in point 3 of the directive—although the detailed rules are made by Member States—the resulted income should be used “[...] to tackle climate change in the EU and third countries, inter alia, to reduce greenhouse gas emissions, to adapt to the impacts of climate change in the EU and third countries, especially developing countries, to fund research and development for mitigation and adaptation, including in particular in the fields of aeronautics and air transport, to reduce emissions through low-emission transport and to cover the cost of administering the Community scheme.”<sup>45</sup>

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industry between 1990 and 2002 means that the industry could achieve some 9GtCO<sub>2</sub> emissions by 2030.

<sup>42</sup>See also in: IP/11/1077 of 26.9.2011.

<sup>43</sup>Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008, amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading with the Community, OJ L 8, 13.1.2009.

<sup>44</sup>According to the Directive: “[...] for each subsequent period, the total quantity of allowances to be allocated to aircraft operators shall be equivalent to 95 % of the historical aviation emissions multiplied by the number of years in the period.” Directive 2008/101/EC, Article 1, p. 8.

<sup>45</sup>Directive 2008/101/ EC, Article 1, point 4, p. 8.

The carbon emissions of the aviation sector became the subject of monitoring activity in 2010. Following the exercise, more than 900 airlines applied for free allocation of emissions units. Consequently, at the end of September 2011 the Commission published the benchmark values for airlines. These values will serve as the basis for the allocation of greenhouse gas emission allowances free of charge to about 900 aircraft operators. There are two benchmarks: one has been calculated for the trading period in 2012, while the other for the ETS III. In 2012, airlines will receive about 0.6797 allowances, and between 2013 and 2020 an airline will receive somewhat less.<sup>46</sup>

The international response to these measures has not been friendly, mainly because overseas it is considered an overreach into the affairs of operators not based in Europe. Operators in the U.S., China and Russia argue that the interference in the aviation sector through the ETS violates the Chicago Agreement (1944). A case is currently being heard before the European Court of Justice.<sup>47</sup>

### ***The Entrance of the Aluminum Industry to the ETS— An Energy-Intensive Example of the New Regulation***

Reports of the effects of ETS on the aluminum sector in previous years emphasized how unfair it was for this sector still to be part of ETS after 2012.<sup>48</sup> The studies argued that eventually certain energy-sensitive industries—like aluminum—will have to leave Europe and search for another territory where regulations of climate policy and CO<sub>2</sub> trading are more advantageous, so as to be able to keep up with their competitors globally. Yet, statements like this are somewhat misleading because an IAE report declared that the European aluminum

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<sup>46</sup>See: Commission Decision of 26 September 2011 on benchmarks to allocate greenhouse gas emission allowances free of charge to aircraft operators pursuant to Article 3e of Directive 2003/87/EC of the European Parliament and of the Council, OJ L 252, 28.9.2011, pp. 20-22.

<sup>47</sup>See: C-366/10. See at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:260:0009:0010:EN:PDF> (10 September 2011).

<sup>48</sup>See e.g. Reinaud, J. (2008). *Climate policy and Carbon Leakage: Impacts of the European Emissions Trading Scheme on Aluminium*. IEA information paper, October 2008. Available: [http://www.iea.org/papers/2008/Aluminium\\_EU\\_ETS.pdf](http://www.iea.org/papers/2008/Aluminium_EU_ETS.pdf).

industry has long been at a disadvantage in comparison with similar production of other countries since 1999.<sup>49</sup>

Despite constant European-led efforts by the aluminum lobby, beginning in 2013 primary and secondary aluminum producers will become part of the CO<sub>2</sub> trading system. According to directive 2009/29/EC, companies dealing with primary and secondary aluminum production will enter the trading system if they apply stokers with higher input power above 20 MW.

Aluminum producers are, however, not the only traditionally energy-sensitive new entrants: precious metal production, ceramics, the glass industry and petrochemicals are among the new traders relating to directive 2009/29/EC.

The entry into the scheme of these new sectors of industry could potentially result in carbon—or competitiveness—leakage and greater calls for the expatriation of such energy-sensitive industries from the European region. Will the relocation of these industries take place if trade patterns and uneven carbon constraints continue on the present course?

At the time of the final stages of this study there is no evidence available that supports the argument of the aluminium industry. The cited IAE report notes that “[...] about 85% of Europe’s primary aluminium imports originate from eight countries: Norway, Russia, Mozambique, Brazil, Iceland, United Arab Emirates, Canada and South Africa. At present, it costs more to produce a tonne of primary aluminium in Europe than in many other regions. However, this was already the situation in 1999, prior to the introduction of a carbon cost in the EU. The carbon constraint is obviously only one element in this picture, as higher electricity prices prevailed before the introduction of the ETS [...]”<sup>50</sup>

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<sup>49</sup>Reinaud, J. (2008). *Climate policy and Carbon Leakage: Impacts of the European Emissions Trading Scheme on Aluminium*. IEA information paper, October 2008, p. 3.

<sup>50</sup>Ibid.

### ***Changing the Rules on Auctioning***

In the first two trading periods, auction affected only a limited quantity of quotas, while in the third period it becomes the main rule of allocation.<sup>51</sup> According to the plans, the Commission aims to put up for sale half of the total quantity of emissions units.<sup>52</sup> The executive authority took action to leave behind the secondary coordinating rule considering earlier allocations. It now intends to define the rules ex ante, with stricter control over the allocation of the specific member states ex post.

The issue of individual allocations may raise the possibility of illegal national aid. Article 107 of the Lisbon Treaty and the related secondary rules prohibit illegal state aid that can put a company into an advantageous situation and distorts competition, while could influence trading among member states. A certain quantity of CO<sub>2</sub> allocated in an inadequate way may seriously influence the expenses of a company, such as electricity production or petrochemicals, because it may bring about an extremely advantageous situation for other companies. It is even more dangerous if companies are entitled to receive large quantities of free quotas without a just environmental effect analysis and then have the possibility for trading them freely.

### ***The Rules of the Auction Processes for the Third Period are Regulated by Regulation 1031/2010/EU<sup>53</sup>***

The auction process is designed on the basis of open, clear and integrated principles. The primary platform will be the European platform, but it does not mean that member states cannot operate their auction platforms. In July 2011 member states committed themselves to the use of a particular auction mechanism, and confirmed in a

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<sup>51</sup>About the auction rules of the second period see e.g. Hepburn *et al.*, 2006. *Auctioning of EU ETS phase II allowances: How and Why?* Climate Policy 6: 137-60.

<sup>52</sup>During the first probation period the parties taking part in allocation were the Commission, the governments of Member States and larger companies. The allocation and the individual distribution were executed via the National Allocation Plans (NAP), while micro decisions i.e. the portion of the quotas for the companies were set by the industrial lobby.

<sup>53</sup>Commission regulation No 1031/2010 of 12 November 2010 on the timing, administration and other aspects of auctioning of greenhouse gas emission allowances pur-

common agreement the auctioning of 120 million allocation units in 2012.

The auction system is based on the trading of the five day-long valid spot products.<sup>54</sup>

The Commission states that “[...] auctions shall be carried out through an auction format whereby bidders shall submit their bids during one given bidding window without seeing bids submitted by other bidders.”<sup>55</sup> The auction has to be terminated in one day, and a two-hour-long period is necessary between each bid, while one period may take at least two hours.

Calculation of the quantity auctioned is a result of a rather complicated method. It is conceived in Article 10 (2) in the following way: “The volume of allowances covered by Chapter III of Directive 2003/87/EC to be auctioned in 2013 and 2014 shall be the quantity of allowances determined pursuant to Articles 9 and 9a of that Directive for the calendar year concerned, less the allocation free of charge provided for in Articles 10a (7) and 11(2) of that Directive, less half of the total volume of any allowances auctioned in 2011 and 2012.” It goes on, “[...] the volume of allowances to be auctioned each calendar year as from 2013 shall be based on the Commission’s determination and publication pursuant to Article 10 (1) of that Directive of the estimated amount of units to be auctioned or on the most recent amendment of the Commission’s original estimate as published by January 31 of the preceding year.”<sup>56</sup> Article 18 defines the circle of bidders.

Generally, it can be said that the regulation safely sets up auction trading. It controls the auction platform, defines duties of the auction controller and the participants, and furthermore regulates the integrate platform of the two- and five-day-termed futures. It also defines the platform of forwards and futures. The Commission expects the first effects of the regulation by December 31, 2014.

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suant to Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowances trading within the Community, OJ L 302, 18.11.2010, pp. 1-41.

<sup>54</sup>The regulation allows forwards and futures as well with specified conditions.

<sup>55</sup>Article 5 of the Directive 1031/2010/EU.

<sup>56</sup>Article 10 (3) of the Directive 1031/2010/EU.

### ***The Price-Correctional Safety Clause***

One of the most important aims of the allocation policy and homogenization of auctions is to avoid carbon quota price volatility. Therefore the modified directive introduces a so-called crisis commission coordinated by the European Commission.<sup>57</sup>

This commission type will be set up if the prices of emissions units are higher than triple the average European carbon market price of the previous two years for six consecutive months.

The directive declares that “[...] if the price evolution referred to in paragraph 1 does not correspond to changing market fundamentals, one of the following measures may be adopted, taking into account the degree of price evolution:

- (a) a measure, which allows Member States to bring forward the auctioning of a part of the quantity to be auctioned;
- (b) a measure, which allows Member States to auction up to 25% of the remaining units in the new entrants reserve.”<sup>58</sup>

The number of allowances set aside for new entrants by the 25 member states for the first trading period of the EU ETS was about 3 percent of the total. The percentage set aside varied, from as little as 0.4% in Poland to 26% in Malta. The theory of distribution was on a “first-come-first-served” basis.<sup>59</sup>

Whether price volatility of carbon markets—highly fluctuating prices and no banking allowed in the first and second trading period—will be targeted efficiently by this safety clause remains to be seen. It is, however, likely that a more comprehensive set of data about the allowances through monitoring reports, a standardized national legal framework and avoiding of free over allocation of credits will calm

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<sup>57</sup>Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, OJ L 140, 5.6.2009., pp. 63-87, Article 1, point 29

<sup>58</sup>Ibid.

<sup>59</sup>Ellerman-Kuchner, *The European Union Emissions Trading Scheme: Origins, Allocation, and Early Results*. Review of environmental economics and policy, Vol 1, No 1, 2007, pp. 75.

down frustration between companies and sectors. Consequently, trading markets should be better suited for doing business and windfall profits are not expected to aggravate participants.

### *The NER300 Programme*

The so-called NER300 programme<sup>60</sup> is not directly part of the rules regulating the European emissions trading but the first apparent effects of it will probably coincide with the start of the third trading period. The program, which started officially in November 2010, was named after part of the units—300 million CO<sub>2</sub> emissions units—for new ETS entrants. Its aim is to establish projects operating with low CO<sub>2</sub> emission technologies from the monetizing of the units, which approach and motivate effective and low CO<sub>2</sub> emission.<sup>61</sup>

The projects advance renewable energies and innovative carbon-dioxide storage. Complementary supporting projects had to be brought in by member states to the European Investment Bank by May 9, 2011 after having been declared adequate and worth being supported.<sup>62</sup>

According to the initial plans from 2010, the Commission will co-finance approximately 8 projects for carbon-dioxide storage and 34 projects for supporting renewable energy.<sup>63</sup> Commission co-financing means that projects that have to be co-financed can be financed—of the relevant costs—with 50% coming from other complementary resources.<sup>64</sup> Co-financing may be found from the Cohesion and Structural funds or in the European Energy Programme for Recovery

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<sup>60</sup>NER: New Entrance Reserve 300.

<sup>61</sup>The programme was established by the Commission Decision C(2010) 7499 final, available at: [http://ec.europa.eu/clima/funding/ner300/docs/c\\_2010\\_7499\\_en.pdf](http://ec.europa.eu/clima/funding/ner300/docs/c_2010_7499_en.pdf), accessed on September 26, 2011.

<sup>62</sup>The Bank monitors the projects and is responsible for selling 300 million emission allowances.

<sup>63</sup>Financial distribution of each field of renewable energy see: <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/549&format=HTML&aged=0&language>.

<sup>64</sup>Co-financing may be combined with *loan financing* provided under the Risk-Sharing Finance Facility (RSFF) set up by the Union and the European Investment Bank (EIB). See also: Commission Decision C(2010) 7499 final, (5).

(EEPR). The projected costs are strictly accounted for, and only costs with extra investment can be included. Thus fixed charges, preference taxes and reducible costs by outgoing from ETS cannot be accounted for. The final financing value of the projects—because of the 300 million emission units for sale—depends on the actual market price of the emissions monetized. The Commission plans to decide on the first projects by the second half of 2012.

Projects that may receive financing must “[...] make use of technologies which are innovative in relation to the state of the art in the key sub-streams for each technology. Those technologies should not yet be commercially available, but sufficiently mature to be ready for demonstration at pre-commercial scale. They should have reasonable prospects of successful demonstration, taking into account that technological risks are inevitable, and the proposed scale of demonstration should be such that no significant additional problems are to be expected from further scaling up.”<sup>65</sup>

At the same time, projects must be ones that may be recreated on other occasions and other places. One-site innovations will not be funded as they do not have a broad European effect.

### *The Third Trading Period and Energy Production*

The preparation of the EU emissions trading system for 2013 and beyond is still in progress. During this process member states can reveal their national interests along certain conditions according to the modified directive 2003/87/EC. This means that a member state can, with its auction rights, support a special industry permanently by allocation of free emission units. This special industry is the electricity industry.<sup>66</sup>

Directive 2003/87/EC—modified by directive 2009/29/EC—lays down that in energy production it is not possible to allocate free quo-

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<sup>65</sup>Commission Decision C(2010) 7499 final, (10).

<sup>66</sup>This industry is special because in the first two trading periods almost all the shortages of emission quota allowances were allocated to it. If a country had a lack of quotas, these were generally allocated to energy production. The reason for this is that it is the market where there is the least competition from outside Europe. See also: MIT Interim Report, *The European Carbon Market in Action: Lessons from the first trading period*, Report No. 162, June 2008, pp. 11.

tas unless energy is produced from recycled gas. Besides, this “[...] Member States may give a transitional free allocation to installations for electricity production in operation by 31 December 2008 or to installations for electricity production for which the investment process was physically initiated by the same date, provided that one of the following conditions is met:

- (a) in 2007, the national electricity network was not directly or indirectly connected to the network interconnected system operated by the Union for the Coordination of Transmission of Electricity (UCTE);
- (b) in 2007, the national electricity network was only directly or indirectly connected to the network operated by UCTE through a single line with a capacity of less than 400 MW; or
- (c) in 2006, more than 30% of electricity was produced from a single fossil fuel, and the GDP per capita at market price did not exceed 50% of the average GDP per capita at market price of the Community.”<sup>67</sup>

Free allocation is possible only if the Commission accepts the proposed project of the member state, which also contains the diversification of actual source of energy. Emissions units allocated by the ratified emission plan have to be deducted from the member state’s quotas in auction.

In the third trading period member states can exempt the so-called small emission institutions from the trading system with certain conditions, restricted to cutting administrative costs. These institutions are the ones of which rated power input in the last three years did not exceed 35 MW and the then actual power output was lower than 25,000 tonnes CO<sub>2</sub>. These institutions then cannot participate in free allocation because they do not even have restitution liability. If the output exceeds the actual trading value, the institution returns to ETS and cannot leave even if in the meantime it would become entitled to leave.

The chosen small institutions have to meet several requirements; first of all, the member state has to prove to the Commission that it

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<sup>67</sup>Directive 2009/29/EC.

**Table 4. Differences in the Emissions Trading System of the EU in Periods I and II and III**

<b>Period I and II</b>	<b>Period III</b>
National total quotas	EU quota
Fix quotas	Fix quotas that reduces annually
3 and 5-year trading period	8-year trading period
Determined auction (<4%)	Significant auction – constitution
Free allocation for industry + energy producers	Temporary free allocation for emissions concerning industry and heat (not for energy production)
Free allocation based on institutional emission	Free product allocation based on specified emissions
Free allocation based on past emissions	Free allocation based on referential values
Argument:	Argument:
Directive 2003/87/EK	Amended directive 2003/87/EK
National allocation plans	Community Implementing Measures (CIM)
EC decisions about the NAP plans	National Implementing Measures (NIM)
National allocation decisions	

introduces measures equal to the ETS for reducing environmental pollution. The Commission has three plus six months to judge the declared demands of the member states. Emissions allowances and reports have to carry on as they are. Furthermore, the fees for control and certain administrative services do not change. Yet, a new cost emerges related to getting used to the new system. (see table 4)

An important novelty of the ETS III system is the linking of the system with other emissions trading systems.

### *EU-U.S. Relations with Respect to Carbon Trading*

There is a deep-seated difference between how the EU and the U.S. approach climate change issues, including emissions trading. Does the much advocated consensus between the parties that climate challenge can only be tackled jointly exist at all? Or are we talking about two completely different protectionist approaches to national carbon markets?

The Bush administration set the United States back with respect to where the EU stood on climate change and sustainable energy.<sup>68</sup> President Obama tried to change this to some extent. First, a cap and trade bill nearly came to a Senate vote in 2008, amid a flurry of proposals clearly marking territory for a real, rather than symbolic, approach to the issue. At the outset, President Obama made it clear that he intended to change America's approach to climate policy both at home and abroad.<sup>69</sup>

The cap and trade system is a scheme of emissions trading whereby the central administration defines the total amount of the tradable quantity—cap—that the designated sources can emit over a certain period of time, while the designated market players may trade them in order to cover their needs or to win extra profit by functioning eco-friendly.<sup>70</sup>

It seems that the EU implemented significant preliminary U.S. approaches, which were then abandoned by previous U.S. administrations. Most of all, Brussels established the world's first international carbon trading scheme and without delay, learned from the mistakes of the first-mover. However, the EU has chosen a significantly different way of incentivizing the participants. Whereas in the U.S. on-time allocation would take place—in the context of the U.S. SO<sub>2</sub> and NO<sub>x</sub> programmes—the EU ETS adopted a so-called sequential approach. Allocation plans were accepted for one commitment period, with recurring negotiations about the allocation for the subsequent period. As Neuhoff et al. put it: “Although consistent with the iterative nature of international emission reduction negotiations, this allocation approach can have significant implications to efficiency of the market compared with one-off allocation. [...] it creates perverse incentives for CO<sub>2</sub> intensive plants to remain in operation in order to receive free-

<sup>68</sup>At last, it signed the Bali Roadmap under the UNFCCC.

<sup>69</sup>See also in: J. Anderson, *The Carbon And Credit Crisis: Challenges and Opportunities for Transatlantic Relations*, (IEEP), April, 2009. Available at: [http://www.boell.eu/downloads/carbon\\_and\\_credit\\_crisis\\_paper.pdf](http://www.boell.eu/downloads/carbon_and_credit_crisis_paper.pdf), accessed on September 13, 2011.

<sup>70</sup>Particularities of the system: opt-ins, set-asides, offsets. For a longer explanation, see, e.g.: Aulisi et al: *Greenhouse gas emissions trading in U.S. States. Observations and lessons from the OTC NOx Budget Program.*, WRI, 2005. p. 5.

allocations, even if closure or replacement is socially more efficient. In addition, firms might invest in and operate more carbon intensive technologies if they anticipate that future allocations of allowances will be proportional.”<sup>71</sup>

Probably not all the advantages of such a system have been identified since the entry into force of the ETS in 2005. In addition, Europe is without a transatlantic partner in emissions trading. There may be many reasons for this, of which global views on climate change and the participatory nature of greenhouse gas reductions are prominent. The Copenhagen Accord from 2009—in which the U.S. made its first commitments—can only be considered a start, as it has no legally binding effect.<sup>72</sup>

The U.S. started to reduce air pollution by regulatory actions—e.g. the Clean Air Act—as early as in the 1970s.<sup>73</sup> A later amendment of this first major climate change related legislation in 1990 introduced the possibility of emissions trading.<sup>74</sup> The long awaited—and spectacularly soon-disappearing—Climate Bill was watered down in 2010. What were the reasons behind the immediate halt?

One of the significant internal issues in the U.S. is how to limit the cost of compliance while trying to maintain long-term environmental and eco-environmental stability. The other is—as has been pointed out by several authors—how to engage developing countries so as to persuade them to seriously limit their emissions.<sup>75</sup> This latter issue is of particular interest in relation to China and India, two of the main trading partners of the U.S., and are on the top of the developing

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<sup>71</sup>Neuhoff *et al.*, *Allocation, incentives and distortions: the impact of EU ETS emissions allowance allocations to the electricity sector*, 19 May 2006, pp. 3-4. Available at: <http://www.dspace.cam.ac.uk/bitstream/1810/183627/1/eprg0618.pdf>, accessed on September 30, 2011.

<sup>72</sup>The US agreed to set emissions at the level of 83% of its emissions in 2005. See: <http://unfccc.int/resource/docs/2009/cop15/eng/107.pdf>, accessed on September 15, 2011.

<sup>73</sup>P.L. 88-206., Effective of December 17, 1963: Significant amendments in 1970, 1977, 1990.

<sup>74</sup>104 Stat. 2468, P.L. 101-549.

<sup>75</sup>Whether the “safety valves” mechanisms would be a better choice to compensate compliance costs—yet to be seen. See, e.g. M.W. Wara and D.G. Victor, *A realistic Policy on International Carbon Offsets*, PESD WP No. 74., April 2008.

countries' list. Preferable reduction scenarios for these countries are necessary in order to drive competitiveness.

However, the political quarrel over how to reduce emissions seems to be purely theoretical in nature as the U.S. Congress has not ratified the Kyoto Protocol—and its flexible compliance mechanisms—and therefore has not undertaken any internationally binding measures in the direction of avoiding the negative effects of climate change. The exploration of the cap and trade systems in California and in the northern U.S. states (RGGI) points in the direction of an unwillingness on the part of federal lawmakers, as opposed to local willingness to create carbon trading systems.

Prof. Stern notes: “[...] The possible outcomes that need to be considered, which include major irreversible changes to the climate, are likely to be considerably beyond human experience hitherto. Such uncertainty over the scientific, economic and social consequences of climate change makes it especially challenging for international collective action to agree on greenhouse gas emission targets.”<sup>76</sup>

At the dawn of the third trading period, important questions re-emerge: How does the U.S. approach the third trading period in the EU, where also clearly U.S.-based air companies are involved in the must-reduce, must-comply, must-buy/sell trading scheme, as air traffic joins the scheme? Will the U.S. only aim to fight the EU legislation at international aviation forums? Does the U.S. plan to counteract with a federal scheme that would eventually have effect on European players too? Or will it move towards the question in a cooperative way and signs the Kyoto Protocol, coordinate with the EU and the developing world, while reducing its emissions by the required percentage?

## Conclusions and Recommendations

The success of the third trading period in the EU depends on available information and the administrative costs related to trading of emissions, which the companies will have to face. Instability and volatility of the quota prices may be avoided if the Commission exam-

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<sup>76</sup>N. Stern, What is the Economics of Climate Change?, *World Economics*, Vol 7, No 3, April-June 2006, p. 9.

ines on time the national requests and reduces the likely heterogeneous national allocations.

NER 300 may play an important role because a CO<sub>2</sub> or energy supporting project, which can be financed totally, could influence functional costs and trading positioning not only in the ETS but also in the regional trading systems.

As to the period after the Kyoto Protocol expires, the global situation regarding the regulation of greenhouse gas emissions is hardly predictable. The failure of recent negotiations (Copenhagen, Cancún) made it clear that, although states—more or less—share each other’s opinion about importance of reducing global warming of the earth (precisely slowing the process), there are significant differences in their economic, political and social interests in doing something about it. Any efficient response to climate change “[...] must be based on an international understanding that its origins, impact, scale and urgency require action that is global and collective.”<sup>77</sup>

The success of the third ETS trading period—the world’s largest carbon market—largely depends on the third parties and external players: i.e. on non-EU countries and global stakeholders, too. Yet, the first internal success-test will be the accessibility to information that is required for trading for the parties, price volatility of the quotas and the opportunism of the industry in planning ahead. In parallel, the European Commission will have to speed up in analysing the national requests so that from an administrative point of view, there are no burdens to trade and the market is not sluggish. Market sensitive information and regulator’s plans are to be accurately announced and made accessible. The monitoring of the non-legal requirement of the Member States concerning the reinvesting of the income from credit auctioning is a sensitive exercise, which must be reinforced. Given the uneasy relationship fuelled by the 2012/2013 ETS trading rules, this is a vital point also for EU-U.S. climate change related negotiations.

In turn, the U.S. will also have to rethink the constructive nature of the *Anti-ETS Bill*, which is likely to cause more quandary than benefit for the aviation industry on both sides of the Atlantic. A questionable patriotic response to an allegedly extraterritorial act of the EU seems

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<sup>77</sup>Ibid.

to be rushed and economically counterproductive. It is advisable that the EU and the U.S. continue to search for the common tone in this regard, but foremost, the U.S. reassesses the Act.

In addition, because of the results of global greenhouse gas emissions is not predictable, especially after the expiration of the Kyoto Protocol, it is vital that solutions are finalized in the shortest amount of time and that they do not remain regional, but reach the global scale. Emissions reduction techniques aren't particularly valuable if they only come from one part of the world, whereas other regions benefit from the efforts of the more dedicated states. There is urgency but action must be unified, applicable and monitoring-proof. The global players must aim for a speedy compromise.