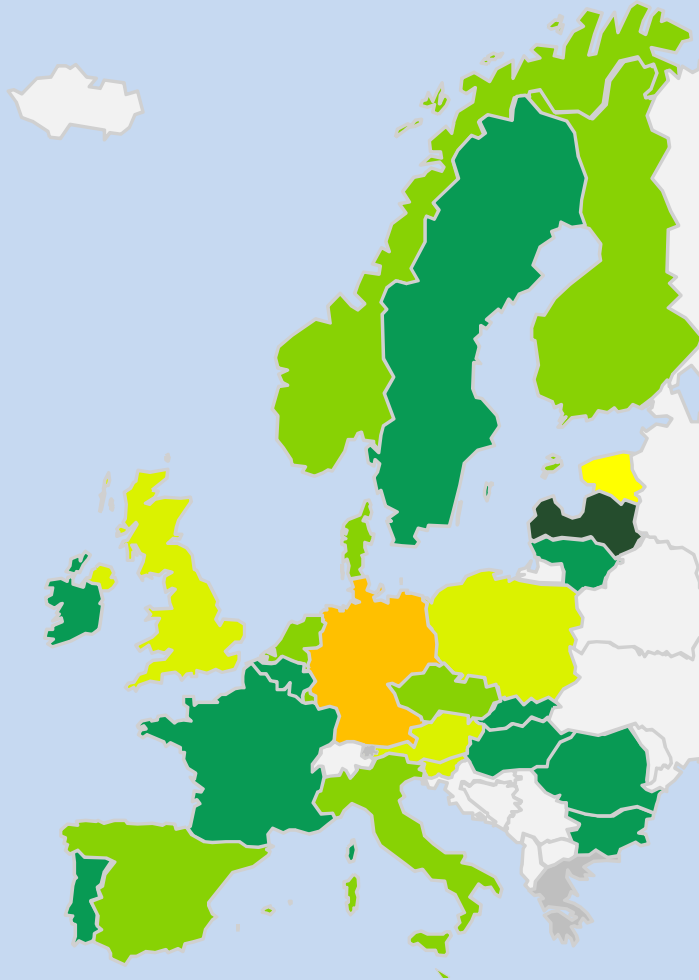


Views of the EU ETS Visualising the EU Emissions Trading System



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The EU ETS after four years of the First Commitment Period

The First Commitment Period (2008-2012)

After the Supplementary Program Commitment Period (2005-2007) the EU ETS has now completed four years of the First Commitment Period (2008-2012), with one more year to go.

The CITL database

With the availability of about 90 percent of the verified emissions for 2011 we are able to make first judgements about the performance of the EU ETS in the First Commitment Period based on the four reported years including 2011.

For the analysis only those installations who have submitted verified emissions in all four years were select from the database from the Community Independent Transaction Log (CITL).

Focus of our analysis

The focus of our analysis is on net positions of installations, sectors, and countries for obtaining insights into the stringency of the allocations.

In addition we want to visualise our results in order to get a better understanding of the geographical and sectoral differences.

Evaluating net positions

To measure the stringency of allocations we define the following measures between allocated allowances and verified emissions:

Net position =

$$\text{Net position} = \frac{\text{Allocated allowances} - \text{Verified emissions}}{\text{Allocated allowances}}$$

Gross long position =

$$\text{Gross long position} = \frac{\text{Allocated allowances} - \text{Verified emissions}}{\text{Allocated allowances}} \text{ if } (\text{Allocated allowances} - \text{Verified emissions}) > 0$$

Gross short position =

$$\text{Gross short position} = \frac{\text{Allocated allowances} - \text{Verified emissions}}{\text{Allocated allowances}} \text{ if } (\text{Allocated allowances} - \text{Verified emissions}) < 0$$

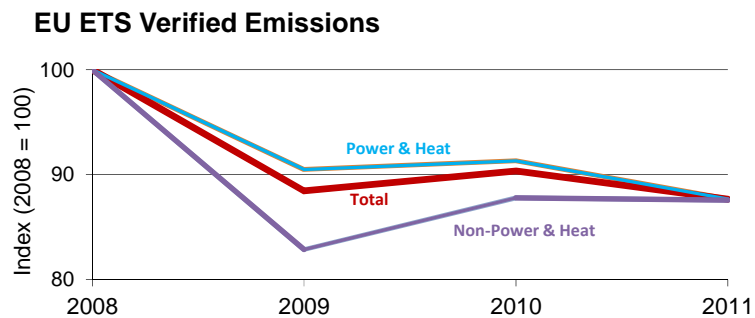
The dynamics of verified emissions

The lasting impact of the economic decline of 2009

Verified emissions for those installations which have reported over the whole period from 2008 to 2011 dropped by about 12 percent over these four years as can be seen from Figure 1.

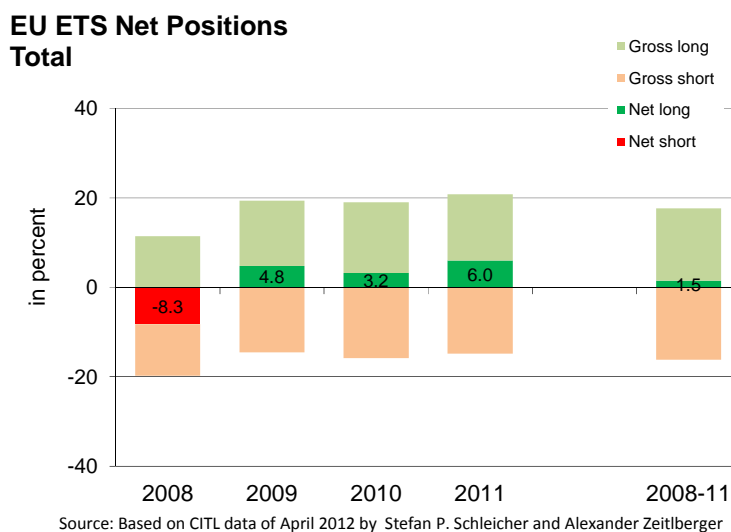
The biggest impact for this decline came from the economic downturn in 2009. Taking also into account low winter temperatures, in particular at the end of 2011, evidence for mitigation effects remain rather weak.

Figure 1



Source: Based on CITL data of April 2012 by Stefan P. Schleicher and Alexander Zeitlberger

Figure 2



The stringency of allocations

Over the First Commitment Period the EU ETS will remain in a long position

Looking at Figure 2, we realise that over the first four years of the First Commitment Period the EU ETS in total exhibits a long net position of 1.5 percent, the share of the difference between allocated allowances and verified emissions in relation to allocations. This result is in contrast to the endeavour of the EU Commission to set ex ante a more stringent cap compared to the Supplementary Program Commitment Period (2005-2007).

This long net position results from gross long positions of 17.7 percent and gross short positions of 16.2 percent.

The final fifth year of the First Commitment Period is not expected to bring the EU ETS into a short position.

Only in 2008 the EU was in a short position

Figure 2 also indicates that only in 2008 the EU ETS was short with a net position of -8.3 percent.

The sectoral differences

Power and Heat are short, the other sectors long

A fundamental feature of the performance of the EU ETS is the fact that the sector Heat and Power, which accounts for about 74 percent of the emissions, was short in each year whereas the remaining sectors were in a long position in each year.

Figure 3 shows that the Power and Heat sector was short by 10.3 percent accumulated over the first four years of the First Commitment Period. Remarkable is also the wide variation of the gross long and gross short positions which add up to the net position.

In contrast we realise from Figure 4 that the remaining sectors were always in a pronounced long position which accumulates over these four years up to 24.1 percent of the allocated allowances.

Figure 3

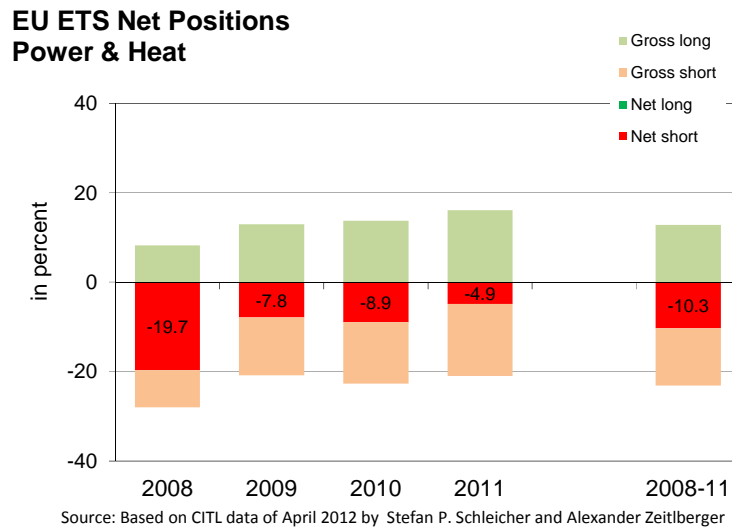
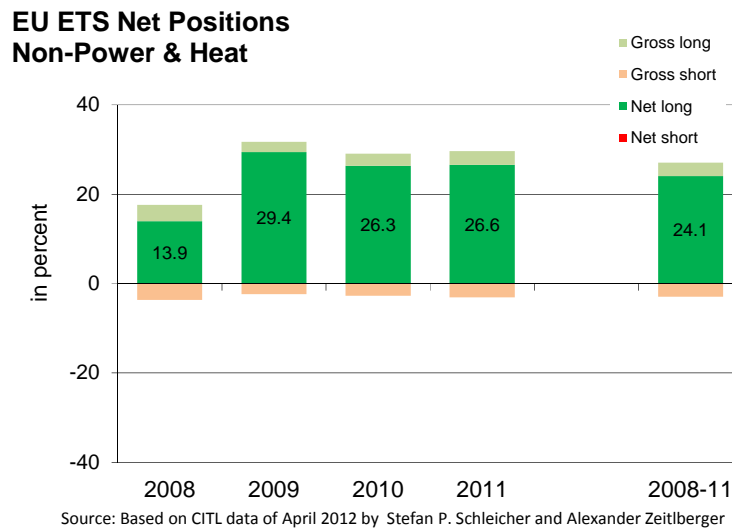


Figure 4



Questions that cannot be put aside

How to enhance the EU ETS?

This emerging evidence about the performance of the EU ETS in the First Commitment Period raises a number of questions that cannot be neglected without undermining the fundamentals of this mechanism:

- What options are available to enhance the EU ETS in the Second Commitment Period?
- Will a set-aside of allowances generate a credible price signal and does the allowance market react to the fundamentals?
- Is a cap-and-trade mechanism sufficient for triggering the radical technological innovations needed for a low-carbon economy?

High carbon price volatility and non-binding allocations	Two main issues about the performance of the EU ETS are the development of European Union Allowances (EUA) prices and the fact that allocations of allowances are not binding. Since the beginning of the trading activities prices show a high variability.
Improving the institutional setting	<p>The proven sensitivity of carbon prices to various endogenous and exogenous influences and the resulting lack of relatively stable investment incentives for market participants are arguments that are put forward when advocating measures in order to provide an institutional setting to intervene in the carbon market and to influence the expectations of economic actors.</p> <p>Such measures could also lower the impacts of unpredictable shocks like the financial and economic crises and restrained growth prospects that effectively loosen the (ex ante) emissions cap.</p>
Rethinking abatement costs and the need for a carbon authority	In order to improve the functioning of the EU ETS we reiterate the suggestions for a carbon market authority and extend them by the argument that the concept of abatement curves is only of limited value in the context of CO ₂ emission reductions where marginal abatement costs often are ambiguous and time variant.
Market prices need reflect the long-run fundamentals	<p>There are reasons to presume that the observed carbon prices do not reflect the long-run fundamentals which in turn raises other concerns:</p> <ul style="list-style-type: none"> • Market prices may lose their credibility in terms of providing signals for long-term decisions. This has a particular bearing for investment decisions that have an impact on the supply and use of energy and may lead to technological carbon lock-in. • As a consequence this may lead to wrong investment decisions – in some cases with long term consequences – which create excessive costs.

The EU ETS at a crossroads

Repairing a basic design flaw of the carbon market	<p>If the target of a credible long-term carbon price signal is still maintained - so far a cornerstone of EU climate policy - the EU ETS is due for major reforms.</p> <p>The actions needed for enhancing the EU ETS result from a design flaw that has emerged over the recent years.</p> <p>On the one hand long-term supply of the carbon market is fixed but on the other hand the demand for allowances is highly uncertain. Demand in the EU ETS is not only determined by uncertain economic conditions and variability in weather conditions, but also other EU policies, e.g. for renewables and energy efficiency, will have an impact of still unknown size.</p>
Suggested actions	<p>At least three types of actions – all of which still highly controversial - need to be considered:</p> <ul style="list-style-type: none"> • Lowering the emissions cap by a set-aside of allowances which could be administered via the Auction Regulation. • Installing a supply-response mechanism, possibly controlled by the creation of a carbon market authority, which would require a change of the EU ETS Directive. • Stimulating radical technological change by ambitious technology policies as observed in the United States and in China.

The following pages provide further evidence about country profiles and sectoral differences based on the CITL data of April 2012.

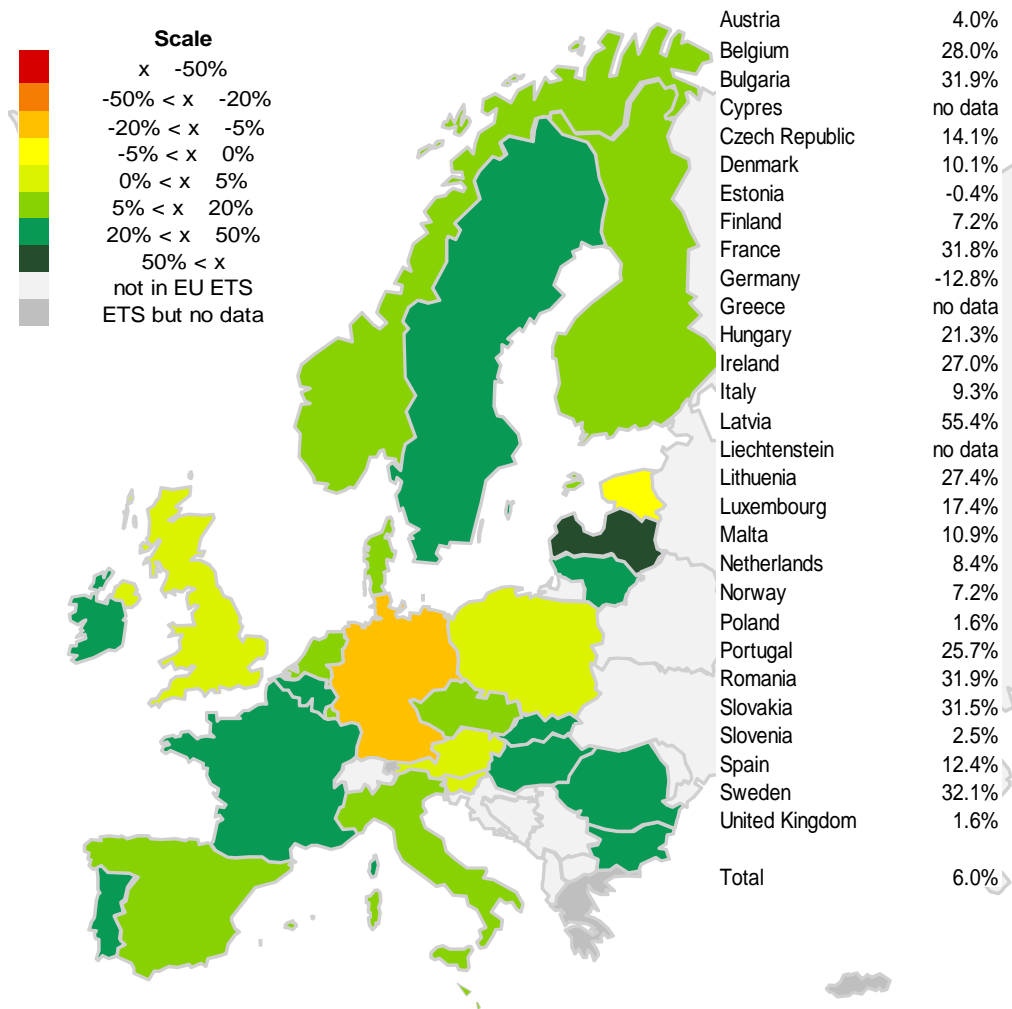
Country profiles of all sectors

Net positions in 2011

Figure 5

EU ETS Net Positions

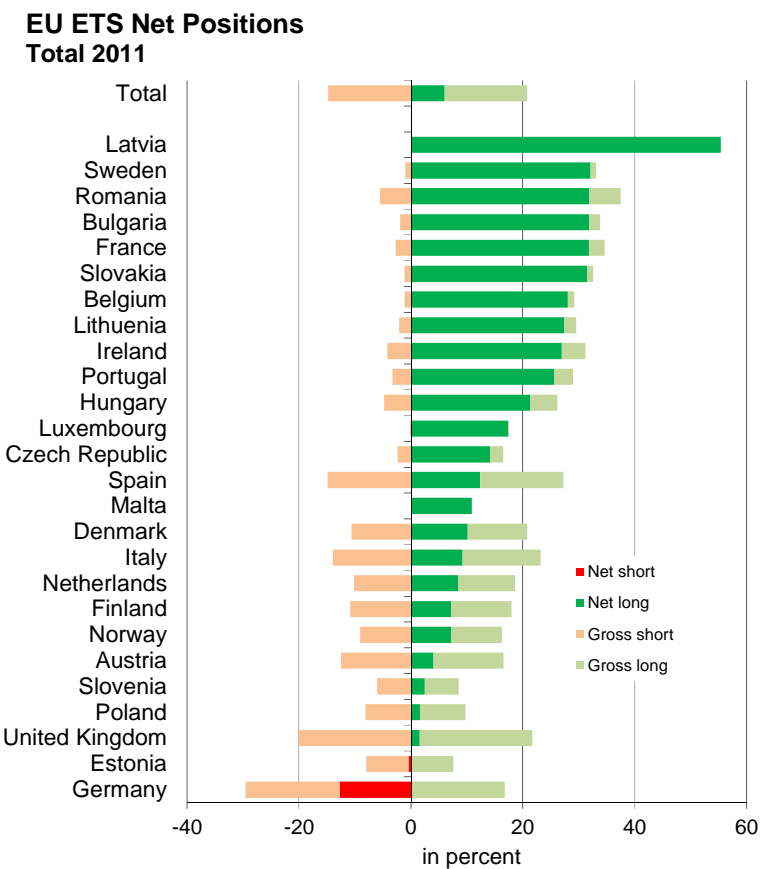
Total 2011



Net Position = (Allocated allowances - Verified emissions) / Allocated allowances

Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitberger

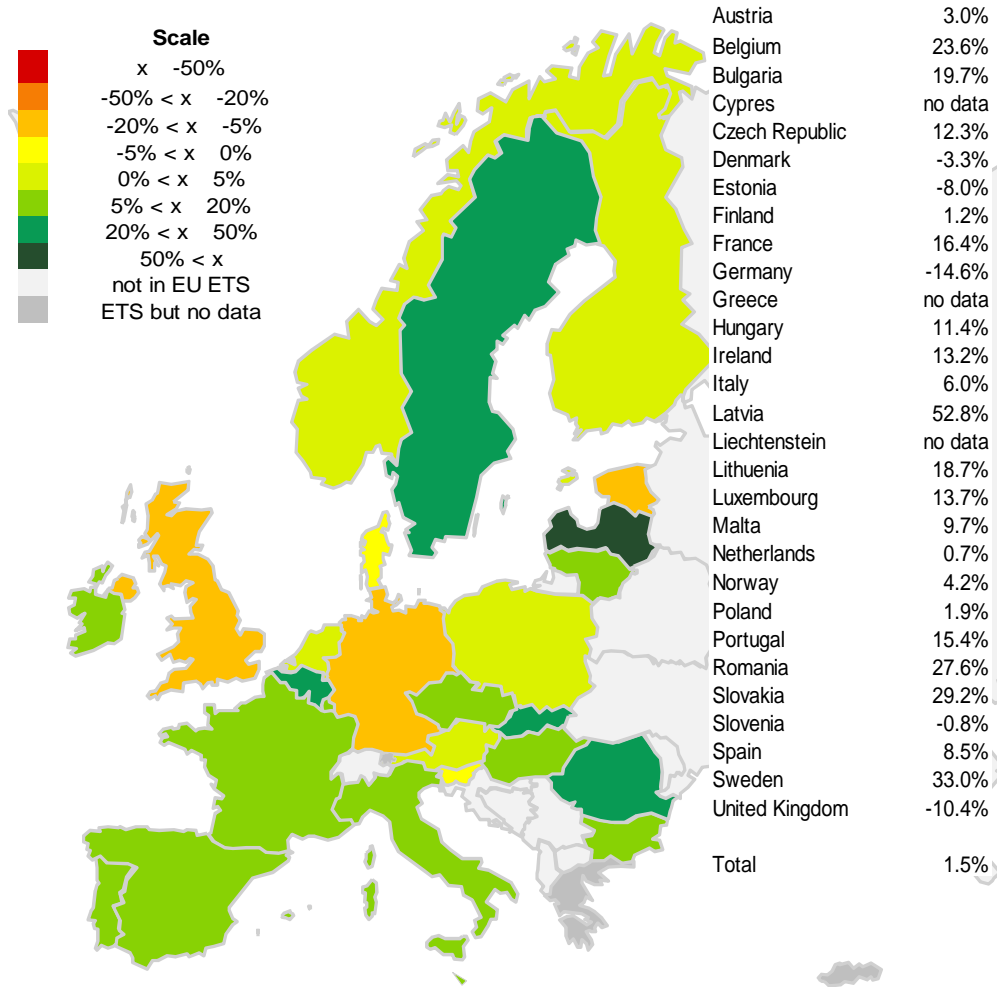
Figure 6



Accumulated net positions 2008 - 2011

Figure 7

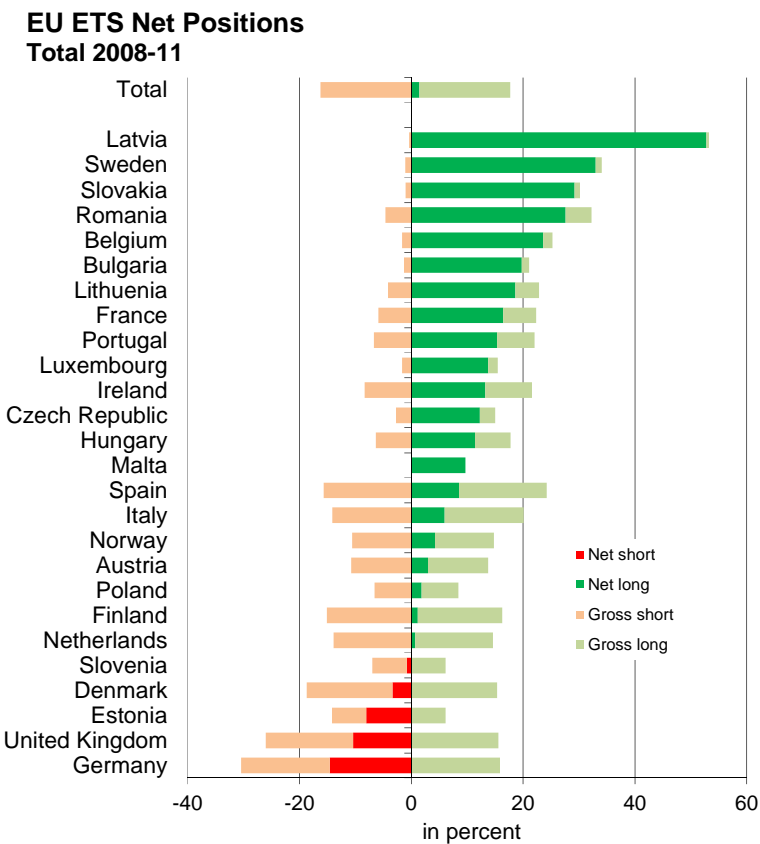
EU ETS Net Positions Total 2008-11



Net Position = (Allocated allowances - Verified emissions) / Allocated allowances

Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitlberger

Figure 8



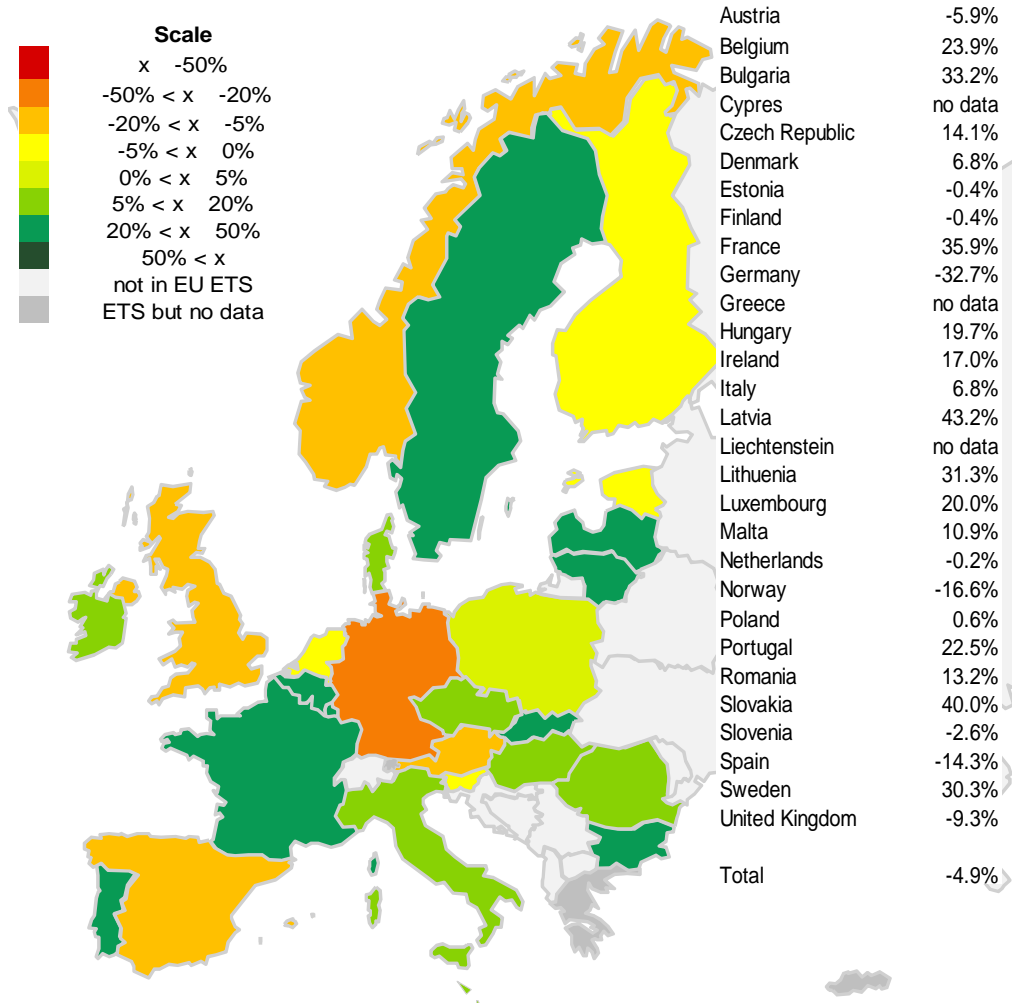
Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitlberger

Country profiles of the power and heat sector

Net positions 2011

Figure 9

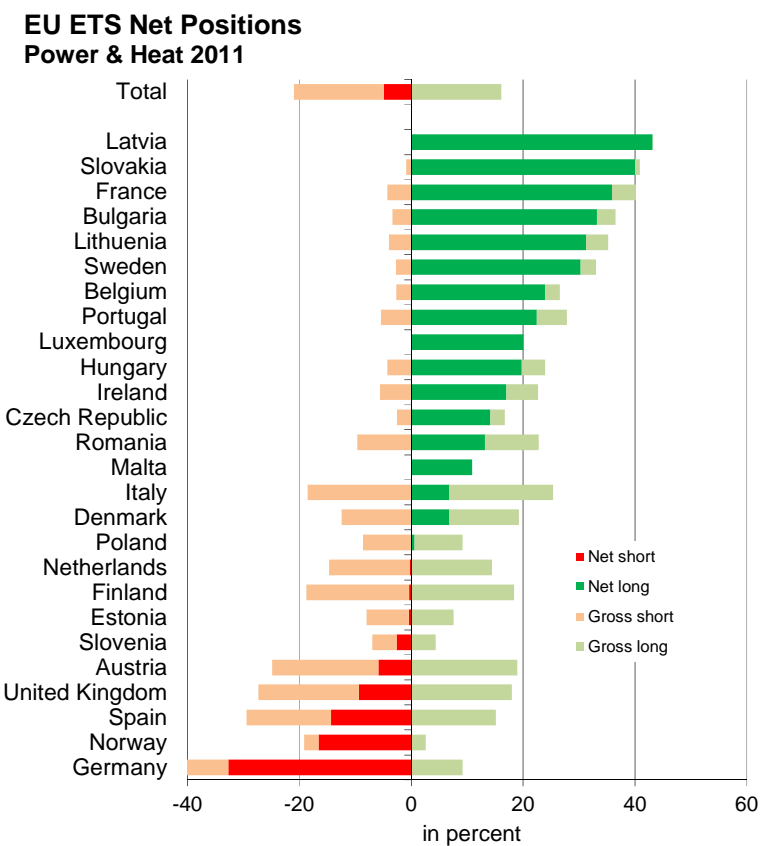
EU ETS Net Positions Power and Heat 2011



Net Position = (Allocated allowances - Verified emissions) / Allocated allowances

Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitberger

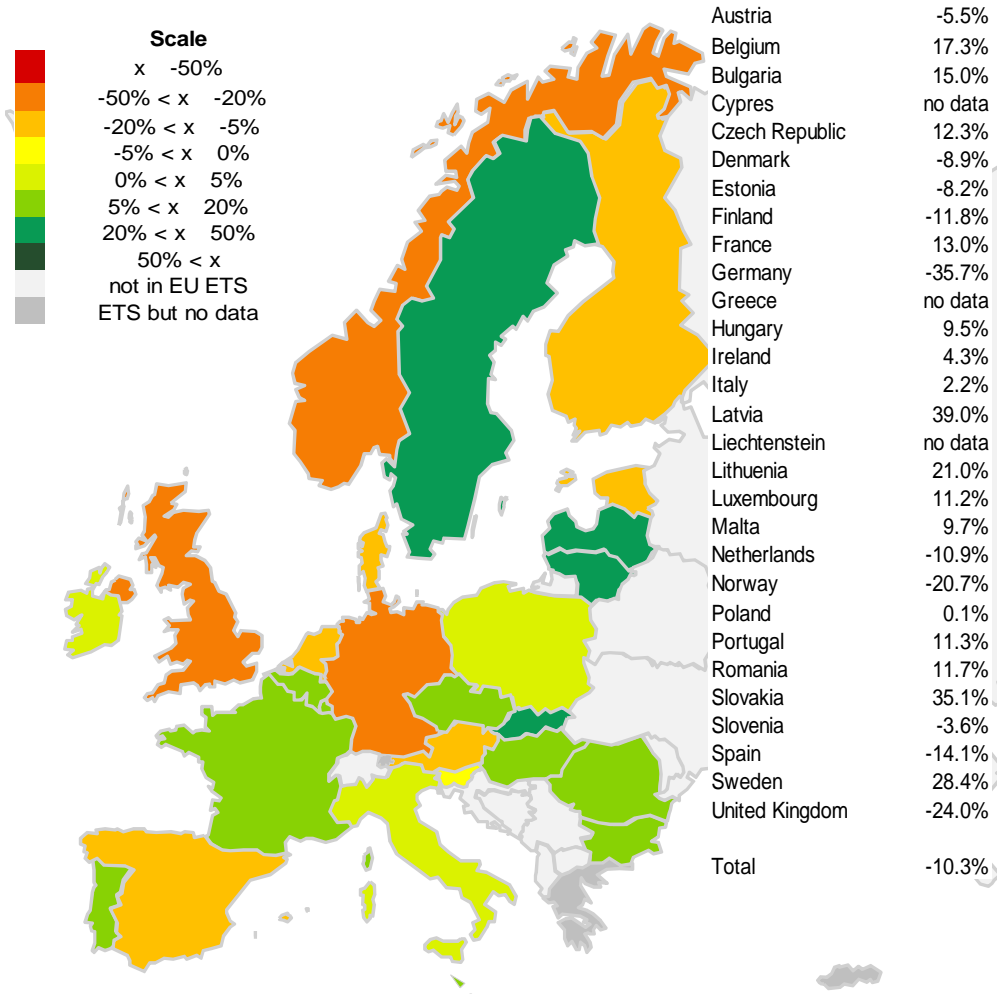
Figure 10



Accumulated net positions 2008 - 2011

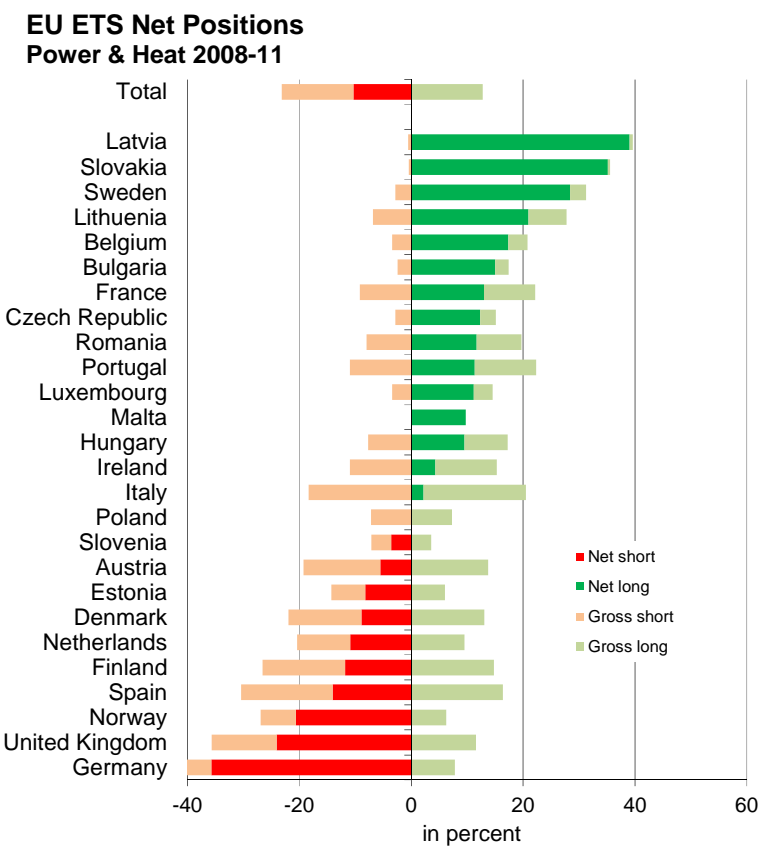
Figure 11

**EU ETS Net Positions
Power and Heat 2008-11**



Net Position = (Allocated allowances - Verified emissions) / Allocated allowances
 Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitberger

Figure 12



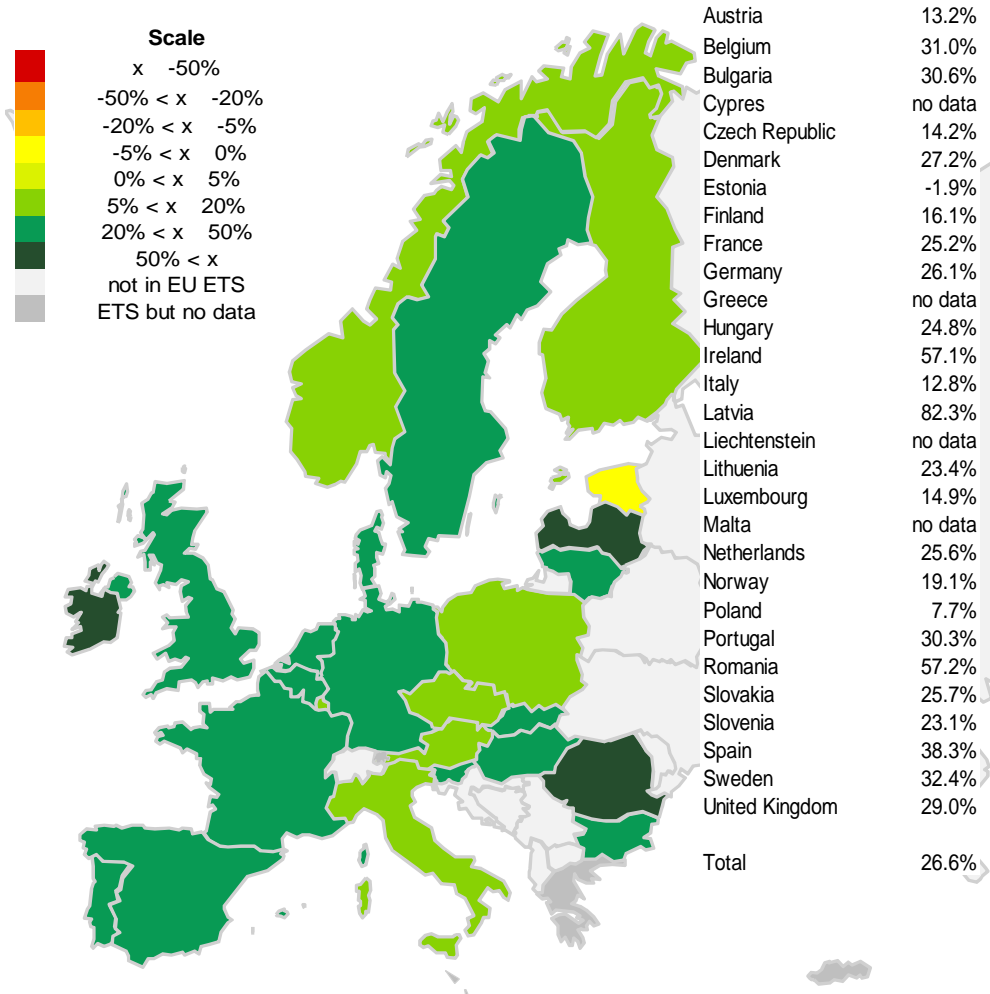
Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitlberger

Country profiles of the non-power and heat sectors

Net positions 2011

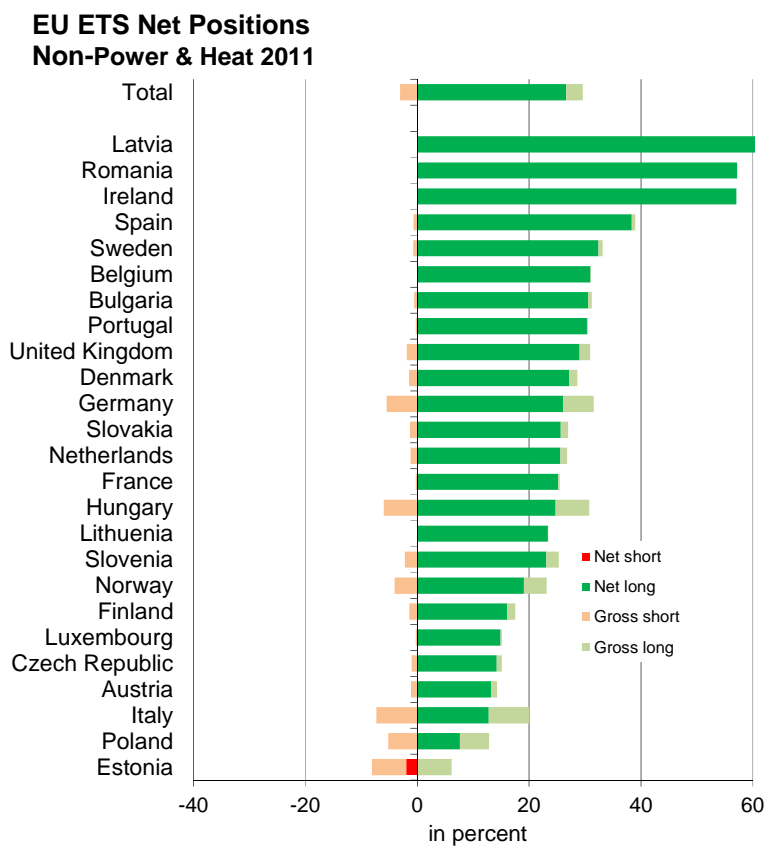
Figure 13

EU ETS Net Positions
Non-Power and Heat 2011



Net Position = (Allocated allowances - Verified emissions) / Allocated allowances
 Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitberger

Figure 14

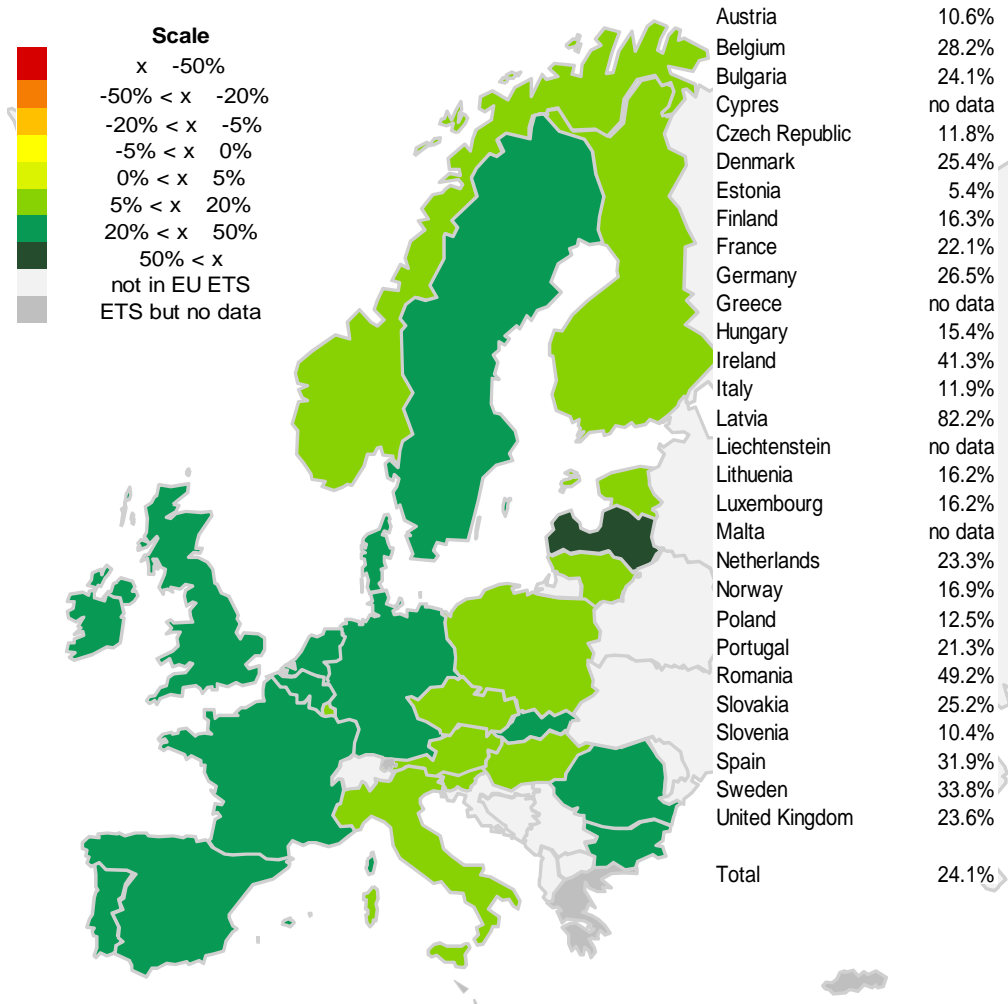


Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitlberger

Accumulated net positions 2008 - 2011

Figure 15

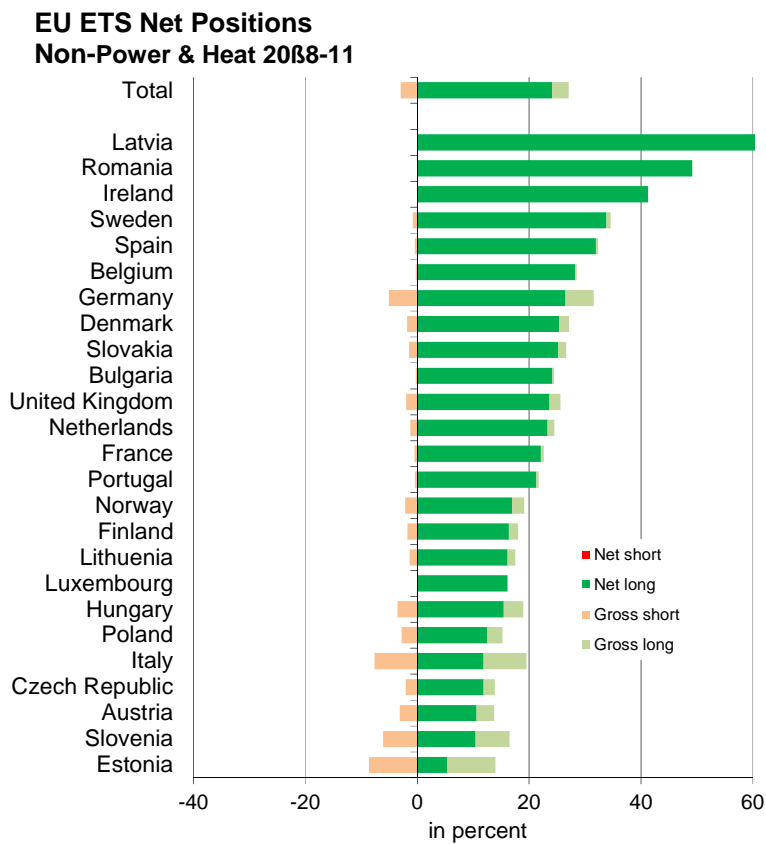
EU ETS Net Positions Non-Power and Heat 2008-11



Net Position = (Allocated allowances - Verified emissions) / Allocated allowances

Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitlberger

Figure 16



Source: Based on CITL data of April 2012 by Stefan P. Schleicher and Alexander Zeitlberger

Net positions of the EU ETS in 2008 - 2011

Figure 17

Net positions as % of allocations	Total			Power & Heat			Non-Power & Heat				
	2008	2009	2010	2008	2009	2010	2008	2009	2010	2008-11	
Austria	-8.2	12.8	2.8	4.0	3.0	-16.4	8.4	-9.2	12.3	-5.5	10.6
Belgium	17.3	27.5	21.6	28.0	23.6	12.9	20.2	12.3	23.9	17.3	28.2
Bulgaria	0.0	33.3	11.1	31.9	19.7	0.0	26.9	-3.6	33.2	15.0	24.1
Czech Republic	5.8	15.1	14.0	14.1	12.3	6.6	14.9	13.6	14.1	12.3	11.8
Denmark	-11.1	-6.6	-5.8	10.1	-3.3	-15.0	-13.9	-13.5	6.8	-8.9	25.4
Estonia	-16.4	9.7	-27.1	-0.4	-8.0	-16.7	9.6	-27.5	-0.4	-8.2	5.4
Finland	0.8	6.7	-9.9	7.2	1.2	-6.4	-9.5	-30.7	-0.4	-11.8	16.3
France	5.2	12.0	16.8	31.8	16.4	-0.8	5.3	12.0	35.9	13.0	22.1
Germany	-22.1	-9.9	-13.7	-12.8	-14.6	-43.9	-31.4	-35.1	-32.7	-35.7	26.5
Hungary	-7.4	15.6	16.2	21.3	11.4	-10.1	15.4	13.1	19.7	9.5	15.4
Ireland	-3.6	13.2	16.2	27.0	13.2	-9.0	3.6	5.6	17.0	4.3	41.3
Italy	-5.1	12.0	8.1	9.3	6.0	-9.2	6.7	5.4	6.8	2.2	11.9
Latvia	48.5	56.2	50.3	55.4	52.8	38.3	40.4	33.9	43.2	39.0	82.2
Lithuania	12.9	18.2	15.7	27.4	18.7	24.4	23.4	4.7	31.3	21.0	16.2
Luxembourg	15.8	12.5	9.3	17.4	13.7	17.2	5.2	2.2	20.0	11.2	23.4
Malta	4.2	10.6	13.0	10.9	9.7	4.2	10.6	13.0	10.9	9.7	16.2
Netherlands	-7.3	1.9	-0.7	8.4	0.7	-19.4	-10.0	-14.7	-0.2	-10.9	23.3
Norway	8.2	0.2	1.5	7.2	4.2	1.3	-31.9	-35.4	-16.6	-20.7	16.9
Poland	-1.8	5.0	2.5	1.6	1.9	-2.3	2.1	0.0	0.6	0.1	12.5
Portugal	1.4	9.0	25.1	25.7	15.4	-3.7	-1.8	27.9	22.5	11.3	21.3
Romania	8.3	32.8	36.8	31.9	27.6	-6.1	16.9	22.4	13.2	11.7	49.2
Slovakia	20.2	32.9	32.0	31.5	29.2	25.8	35.2	39.4	40.0	35.1	25.2
Slovenia	-8.0	1.5	0.8	2.5	-0.8	-6.9	-1.6	-3.2	-2.6	-3.6	10.4
Spain	-6.5	8.9	19.6	12.4	8.5	-30.3	-14.8	4.3	-14.3	-14.1	31.9
Sweden	28.2	42.9	28.7	32.1	33.0	32.7	32.3	18.3	30.3	28.4	33.8
United Kingdom	-25.6	-9.4	-8.6	1.6	-10.4	-40.8	-23.5	-22.9	-9.3	-24.0	23.6
Total	-8.3	4.8	3.2	6.0	1.5	-19.7	-7.8	-8.9	-4.9	-10.3	24.1

Net Position = (Allocated allowances - Verified emissions) / Allocated allowances
 Source: Based on CITL data of April 2012 by Stefan P. Schleichner and Alexander Zeitberger