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Policy Brief:

Facts and Figures for Finalising an Effective Reform of the EU Emissions Trading System

Stefan Schleicher, Christian Hofer,
Alexander Zeitlberger, Milan Elkerbout

December 2016

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Austrian Institute of Economic Research and University of Graz, Wegener Center for Climate and Global Change

Commissioned by Federal Ministry of Science, Research and Economy, Austrian Economic Chamber, Federation of Austrian Industry, and Österreichs E-Wirtschaft

Please refer to: Stefan.Schleicher@wifo.ac.at

2016/441/S/WIFO project no: 7814

Medieninhaber (Verleger), Herausgeber und Hersteller: Österreichisches Institut für Wirtschaftsforschung,
1030 Wien, Arsenal, Objekt 20 • Tel. (+43 1) 798 26 01-0 • Fax (+43 1) 798 93 86 • http://www.wifo.ac.at/ • Verlags- und Herstellungsort: Wien

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POLICY BRIEF

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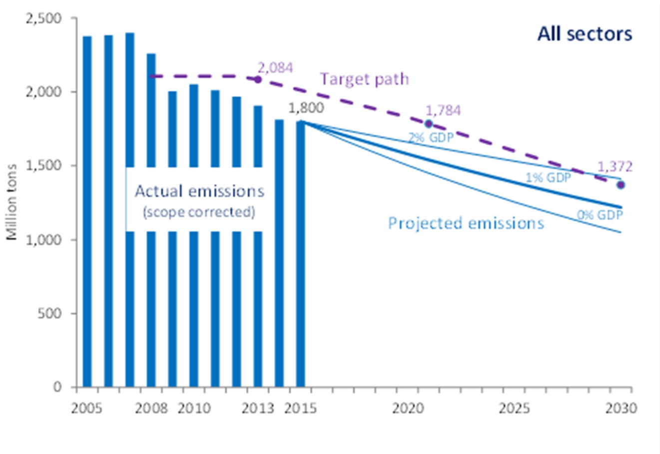

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This policy brief is an update of the recurrent publications series by the Wegener Center at the University of Graz and the Austrian Institute of Economic Research to provide insights and supporting arguments for the reform of the EU Emissions Trading System. This report is building on:

Schleicher, S., A. Köppl, A. Zeitlberger (2016). Extending the EU Commission's Proposal for a Reform of the EU Emissions Trading System. FEEM Working Paper No. 27.2016, April 2016. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2770434##

Schleicher, S., A. Marcu, A. Köppl, J. Schneider, C. Hofer, A. Zeitlberger (2016). Implementing EU ETS Reform Options in View of the Risk of Carbon Leakage. Wegner Center at the University of Graz and Austrian Institute for Economic Research Policy Brief, January 2016. http://www.bmwfw.gv.at/Wirtschaftspolitik/TaskForceKyoto/Documents/Policy%20Brief_Implementing%20EU%20ETS%20reform%20options%20in%20view%20of%20the%20risk%20of%20carbon%20leakage.pdf

Schleicher, S., A. Marcu, A. Köppl, J. Schneider, M. Elkerbout, A. Türk, A. Zeitlberger (2015). Scanning the Options for a Structural Reform of the EU Emissions Trading System. CEPS Special Report No. 107, May 2015. http://www.bmwfw.gv.at/Wirtschaftspolitik/TaskForceKyoto/Documents/Scanning%20the%20Options%20for%20a%20Structural%20Reform%20of%20the%20EU%20Emissions%20Trading%20System.pdf

Contents

Tables

Figures

Database

All data used originate from the European Environment Data and the European Union Transaction Log as reported in October 2016.

If not indicated otherwise, all Figures and Tables were made by the authors based on the databases mentioned above.

1 To the Point: Three Priorities for an effective reform of the EU Emissions Trading System

Overcoming the deadlock in reforming the EU ETS

Most ongoing debates about the reform of the EU ETS seem to get deadlocked because they focus on single issues instead on the whole mechanism, e.g. the share of free and auctioned allowances or a tiered allocation of free allowances. Although single actions are relevant from a stakeholder perspective they fail to overlook the interactions of the whole system.

Shifting the reform debates from fragmented views to integrated reform efforts should therefore enable the EU ETS to be

- more transparent by simpler administrative procedures,
- more robust by relying on self-enforcing mechanisms, and
- more predictable by sheltering installations against future disturbances.

We propose three priorities for a reform that reflect these intentions.

Priority 1: Fully dynamic allocation of free allowances

The allocation of free allowances should fully respond to actual production activity.

This can be achieved the following administrative procedures:

- The installations obtain an intensity benchmark based on free allocations per unit of output.
- The actual volume of free allowances is determined during the annual verification procedure by multiplying this intensity benchmark with the actual output.

In contrast to the current static procedure, the proposed dynamic allocation of free allowances eliminates a number of distortions:

- Installations will not obtain free allowances in excess of their actual emissions.
- Carbon costs per unit of output are not vulnerable with respect to output fluctuations.

Priority 2: Flexible share of free allowances within an emissions budget

The share of freely allocated allowances, e.g. 43 percent of the target path cap in the Commission's proposal, should be referenced to emissions budgets of a trading period and not to annual volumes.

By balancing annual surpluses and deficits of free allowances with the trading period budget of free allowances, this procedure enables

- responding to increases and decreases of production activities via flexible allocations without violating the cap for free allowances,
- allocating not more free allowances than required via the proposed fully dynamic allocation procedure, and
- eliminating the need for the currently used cross-sectoral correction factor unless the emissions budget is exhausted.

Priority 3: Enhancing the stringency of the carbon market

If the EU ETS is expected to deliver a carbon price signal that has a significant impact on production and investment decisions, then the huge accumulated surplus of allowances needs to be reduced.

By the end of Phase 3 in 2020 the accumulated surplus of allowances in the carbon market will be beyond one year's total emissions. A prerequisite for a higher carbon price is an enhanced stringency by tying several measures to a package:

- Increasing the currently proposed 2.2 percent per year for the Linear Reduction Factor.
- Selecting a higher intake rate for the currently proposed 12 percent in the Market Stability Reserve.
- Putting not allocated allowances of Phase 3 into the Market Stability Reserve
- Rebasing the emissions cap in 2021 to reflect actual emissions in 2020.

2 Four essential figures describe the current state of the EU ETS

The following four figures offer a key to understanding the current problems of the EU ETS and highlight the direction of reforms needed.

2.1 Figure 1: Actual emissions are below the target path cap and will remain so for a long time

The emissions reduction cap will not be binding over a long time

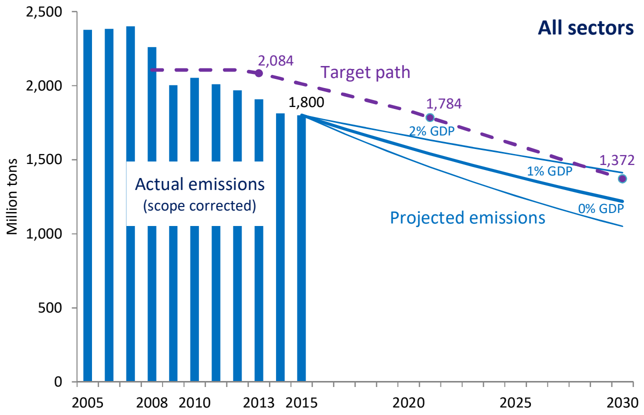
Actual emissions in 2015 were about 10 percent below the target path as exhibited in Figure 2-1.

So far in Phase 3, which started in 2013, actual emissions declined faster than the linear reduction path. This reduction of emissions is mainly due to the ongoing economic slowdown but reflects also lower carbon intensities.

Our simulations indicate that only GDP growth rates close to 2 percent per year might bring actual emissions by 2030 near the target path and thus make it binding.

Given the current economic prospects and the impact of overlapping energy efficiency and renewable policies, the emissions reduction cap will most likely be not binding over a long time.

Figure 2-1 Actual emissions are below the target path cap



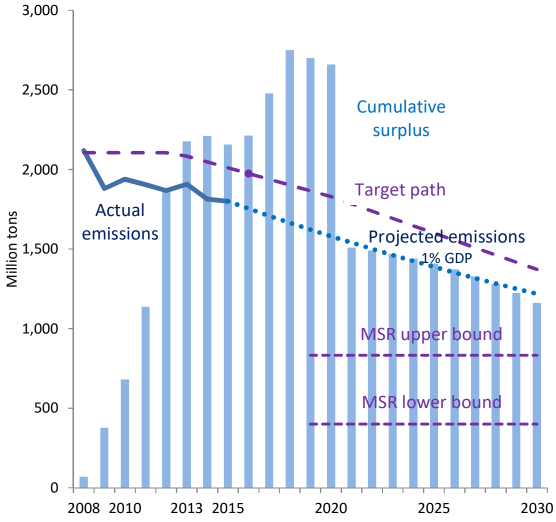
2.2 Figure 2: The Market Stability Reserve (MSR) mechanism will not sufficiently reduce the huge surplus of allowances

The EU ETS continues to experience a massive over-allocation. The cumulative surplus of allowances, which is relevant for the stringency of the carbon market, is way beyond one year's total emissions.

Despite withholding the supply of allowances via the backloading procedure, this surplus will increase up to 2018 because actual supply will continue to exceed actual emissions.

Currently agreed upon procedures for handling this huge surplus of allowances, in particular the Market Stability Reserve mechanism will not suffice to bring this surplus significantly below the target cap.

Figure 2-2 Cumulative surplus of allowances and MSR mechanism

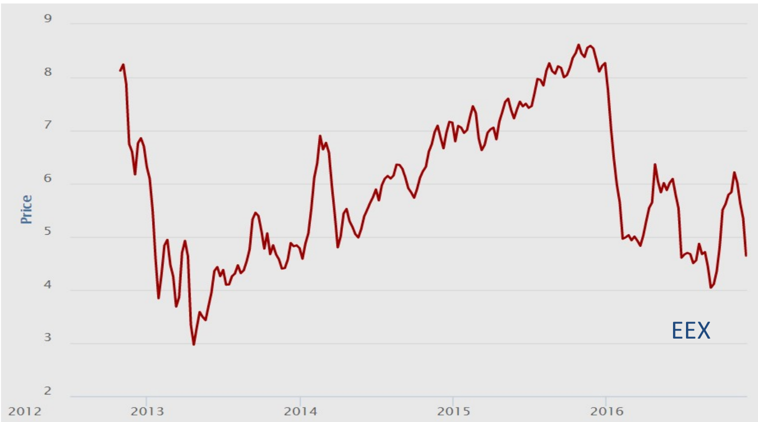


2.3 Figure 3: Currently considered reform options will not significantly increase the market price for European Emissions Allowances (EUA)

The spot price for European Emissions Allowances (EUA), as depicted in Figure 2-3, reflects the huge surplus and the missing stringency. This price currently hoovers around €5 per ton of CO_2, which adds just over 1 Eurocent to one liter fuel.

Given the current accumulated surplus of allowances and looking at projections based on currently debated reform options, it is highly unlikely to expect a significant increase of the market price of EUAs over the next years and not even by 2030.

Figure 2-3 Spot price for European Emissions Allowances (EUA)



Source: EEX

2.4 Figure 4: The current mechanism for allocating free allowances is creating distorting impacts

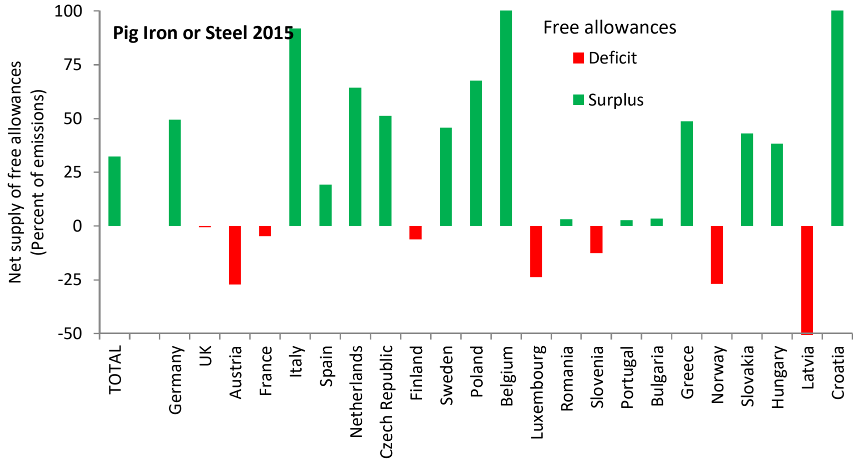
Free allocation of allowances is supposed to protect industries that are exposed to international competition and to reward improvements in emissions performance.

In the current setup free allowances are within large thresholds ex ante allocated to installations over the whole trading period. These allocations are based both on outdated performance and activity indicators, thus in turn creating a number of distorting impacts.

- For the whole EU ETS the huge surplus of allowances reflects the fact that the volume of ex ante allocated free allowances can exceed the volume of actual emissions but also the inflow of international offsets.
- Within individual sectors in the EU ETS this mechanism creates considerable cost distortions.

In the sector Pig Iron or Steel as depicted in Figure 2-4,, Austrian installation faced a deficit (red bars) of 27 percent of free allowances compared to their emissions, while installations in Germany benefitted from a surplus (green bars) of 49 percent and in Italy even with a surplus of 92 percent.

Figure 2-4 Deficits and surpluses of free allowances for the sector Pig Iron or Steel



3 Additional evidence about the EU ETS

Alongside the four major facts about the state of the EU ETS presented in the previous section, we provide additional evidence on a more granular level.

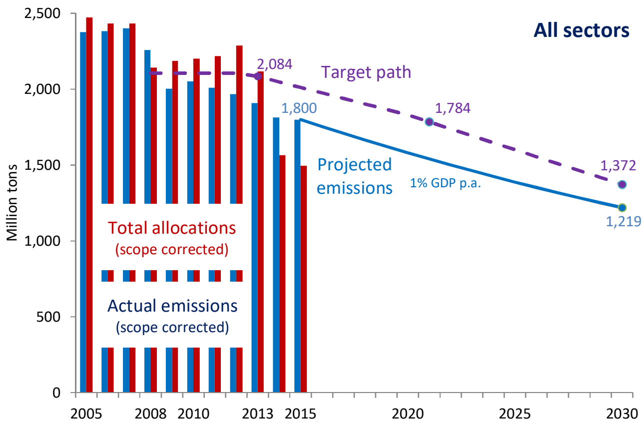
These additional facts comprise the interrelationship between supply of allowances and actual emissions, the controversy about the share of free allowances and the extremely uneven size distribution of installations.

Together these facts become the building ground for suggestions how to enhance the EU ETS.

3.1 Up to 2013 the total allocation of allowances exceeded emissions

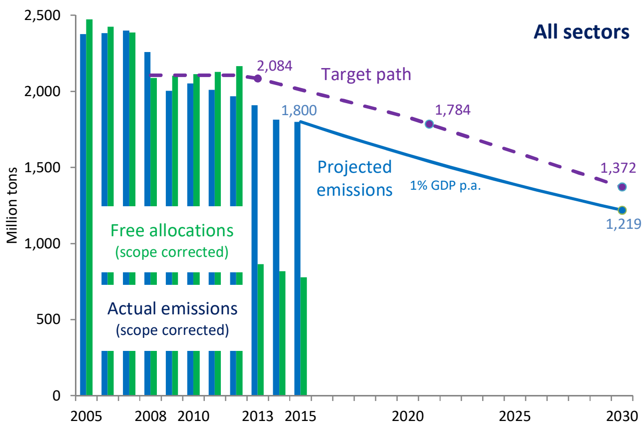
The total supply of allowances from free allocations, auctioning and international offsets considerably exceeded actual emissions in Phase 2 (2008 – 2012) and also in 2013 as can be seen from Figure 3-1.

Figure 3-1 Actual emissions and total allocation of allowances



Up to Phase 2 the main source for the supply of allowance were free allocations. Starting with Phase 3 in 2013 the power sector has to rely on auctioned allocations as can be seen from Figure 3-2.

Figure 3-2 Actual emissions and free allocation of allowances



3.2 The controversy about the split between auctioned and free allowances

The split of the emissions cap between auctioned and free allowances

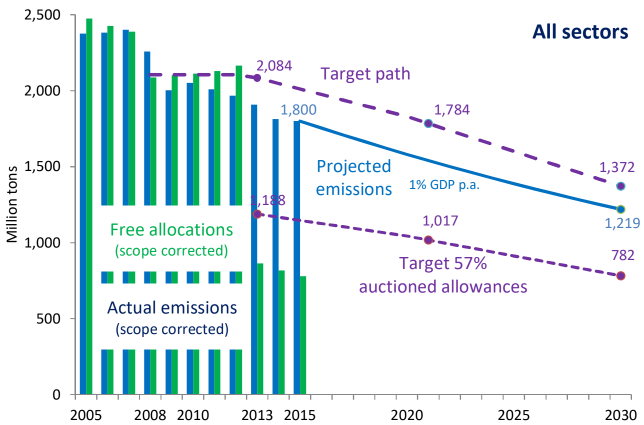
The Commission's proposal suggests a 57 percent share for auctioned allowances and the remainder for free allocations. This is based on the October 2014 European Council Conclusions which state that the share of allowances to be auctioned should not be reduced.

In the sequel this number stirred considerable controversies because of missing clarity:

- It is not reported which volume and which percentage of free allocations has been allocated so far in Phase 3 to what are considered the industrial sectors.
- From the proposed 57 percent share some allowances will be used for the power sector in eligible Member States.
- From the 43 percent share 400 Mt will be shifted to the Innovation Fund. Some MEPs propose to increase this number of allowances for the Innovation Fund.
- It is not clear from which share allowances may be transferred to the non-ETS sectors.
- Some Member States consider that the auctioning share should be calculated in a different way indeed, and end up with shares ranging from 52% - 55%.

Figure 3-3 visualizes this split in the context of projected emissions under the assumption of a 1 percent p.a. GDP growth.

Figure 3-3 The split between free and auctioned allowances in the Commission's proposal



Missing information about this split

However, the implications of this split for industry and non-industry installations are far from clear.

The main reason is that a portion of combustion activities need to be attributed to industry installations. Reliable numbers about this relation are not available and definitely should be explained by the Commission.

We show in Figure 3-4 how free allocations would relate to projected industry emissions if we define this sector by activity codes 21 to 99 in the EUTL with a current share of 32 percent of total emissions.

Analogously Figure 3-5 exhibits targeted auctioned allocations for the non-industry sector. Both Figures need to be modified with respect to the shift in combustion activities as explained above.

Figure 3-4 Free allowances for the industry sector

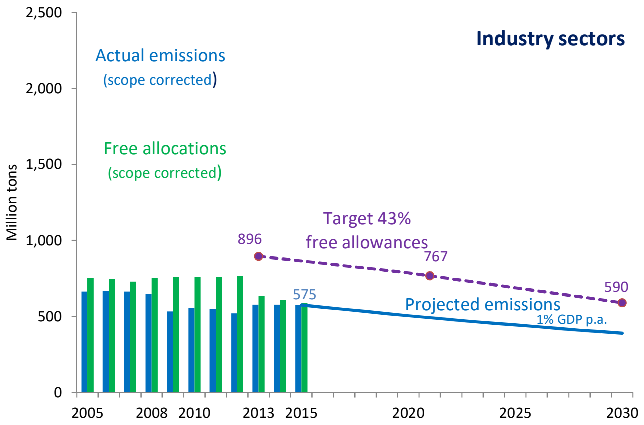
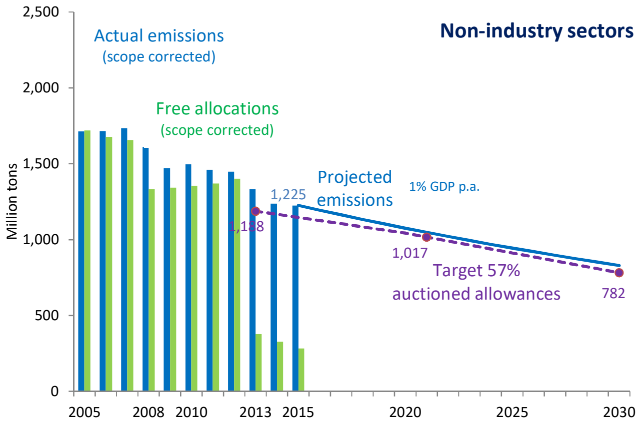


Figure 3-5 Free allowances for the non-industry sector



3.3 The structural fragmentation of the EU ETS

The installations that comprise the EU ETS exhibit pronounced structural fragmentations with respect to different characteristics.

The sector Combustion of Fuels is twice as big as the Industrial Sectors

About 32 percent of emissions are attributed to Industrial Sectors (activity code 21 to 99) which have completely different abatement options compared to combustion activities and are at least partially exposed to the risk of carbon leakage.

Three activities dominate in the Industrial Sectors

The activities Refining of Mineral Oil, Production of Cement Clinker, and Production of Pig Iron or Steel account for 60 percent of total emissions from the Industrial Sector as can be seen from Figure 3-6.

These activities correlate partly with the sectoral NACE classification for the Steel, Refineries, and Cement industries. However, since this classification is based on final products, not activities, discrepancies may arise.

An example is combustion of fuels, an activity generally associated with electricity production, but which nevertheless takes place in major energyintensive industries as well; including the steel and refining sectors.

The NACE4 classification is used in the assessment of carbon leakage risk, and as such is more important from a policy perspective. We provide evidence of emissions and allocations throughout major NACE4 sectors in later sections.

Furthermore the industrial sector has diverse peculiarities among Member States. The corresponding country distribution in Figure 3-7 highlights the strong industrial base of Germany.

Figure 3-6 Size distribution of Industrial Sectors

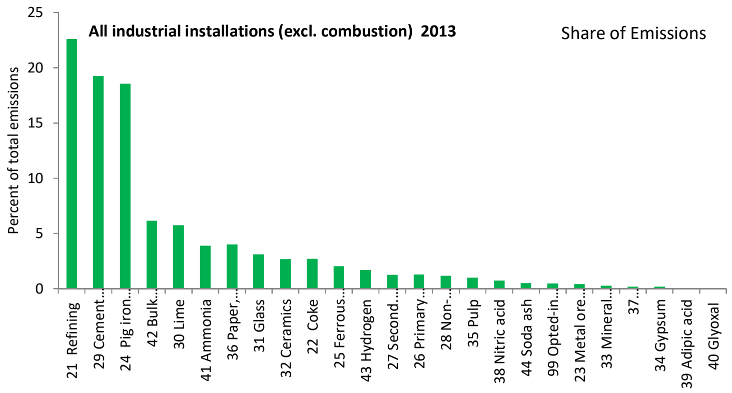
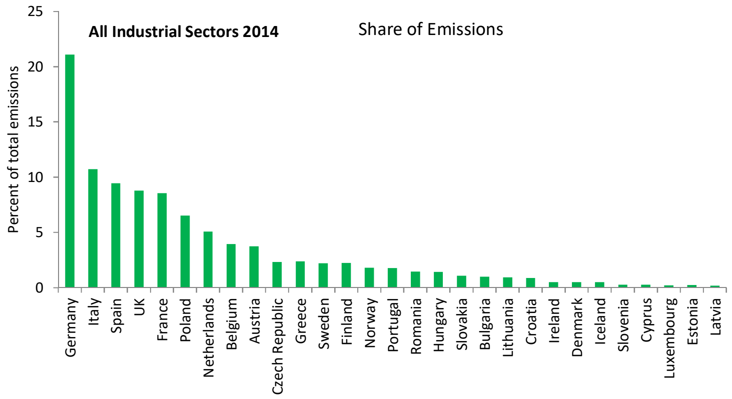


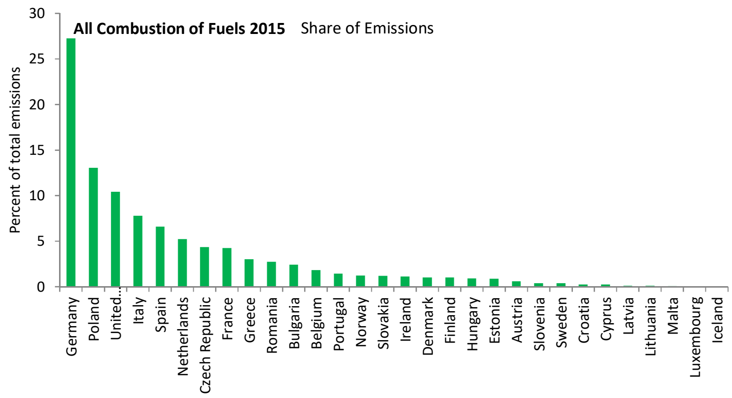
Figure 3-7 Country distribution of Industrial Sectors



The sector Combustion of Fuels

The corresponding country distribution of the sector Combustion of Fuels in Figure 3-8 lists again Germany on top, followed by Poland.

Figure 3-8 Country distribution of the sector Combustion of Fuels



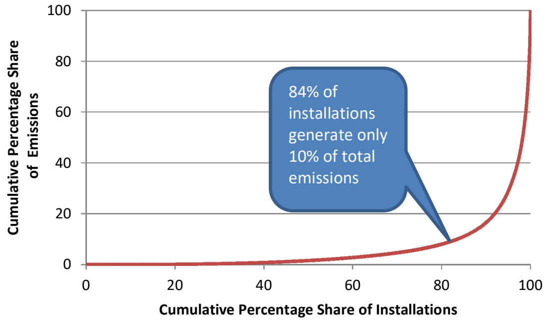
3.4 The extremely uneven size distribution of installations

Not very well known is the extremely uneven size distribution of installations.

Figure 3-9 illustrates this fact by depicting on the horizontal axes the share of installations ordered by their size and on the vertical axis the corresponding share of emissions. These are some illuminating numbers based on 2015 data:

- 84 percent of installations emit less than 116 thousand tons and account for 10 percent of total emissions.
- 73 percent of installations emit less than 50 thousand tons and account for 5 percent of total emissions.
- 60 percent of installations emit less than 25 thousand tons and account for 3 percent of total emissions.

Figure 3-9 The distribution of the size of installations



3.5 Revealing cost distortions from free allocations

Relative net surplus of free allowances

An issue that has only recently emerged concerns the cost distortions generated by the current rigid mechanism for allocating free allowances.

We approach this issue by looking for each installation at the net surplus of free allowances, i.e. the difference between the volume of free allowances and actual emissions, and divide this net surplus by the volume of net emissions. This relative net surplus is very revealing for obtaining a better understanding of the related cost implications.

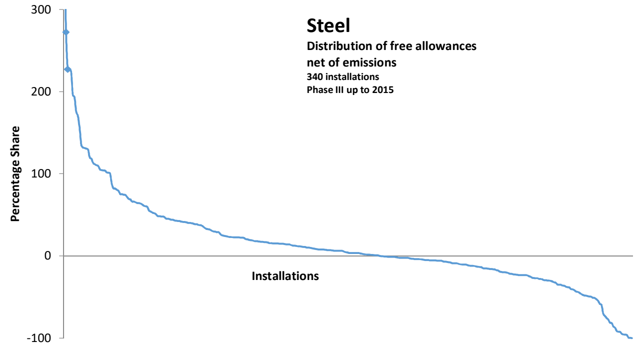
Iron and steel industry

In Figure 3-10 installations of the NACE4 sector 24.10, representing the iron & steel industry, are ordered on the horizontal axis according to their relative net surplus of free allowances, which is expressed as a percentage of actual emissions on the vertical axis.

The amount of positive net surpluses obviously exceeds the amount of negative ones. Remarkable is also the size of these surpluses, which exceeds for several installations their total volume of emissions.

This evidence points to the desirability of a revised mechanism for allocating free allowances, that avoids such discrepancies.

Figure 3-10 Distribution of the net surplus of free allowances for Production of Pig Iron or Steel

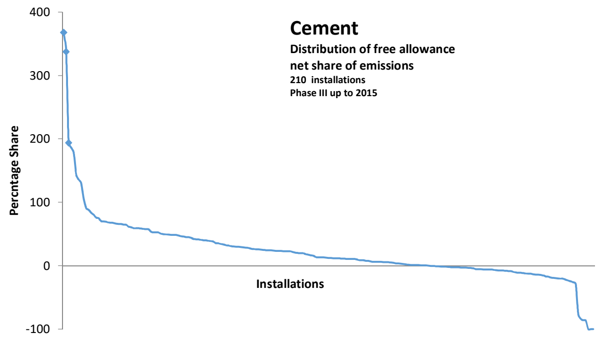


Cement industry

Similar evidence emerges for the NACE code 23.51, representing the Cement industry, as can be seen in Figure 3-11 with most installations showing free allocations in excess of their emissions but quite a few with surpluses that are even bigger than their emissions.

These differences in the net surpluses can't be explained by differences in technologies but reflect slower outputs compared to the activity levels that were used for determining the benchmarks and the ex-ante allocations of free allowances. The high inequality in the net surpluses echoes regional peculiarities in the market for cement, e.g. the breakdown of the building boom in southern Europe.

Figure 3-11 Distribution of the net surplus of free allowances for Production of Cement Clinker

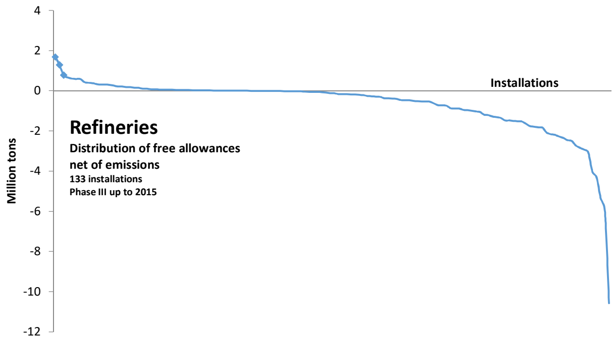


Refining industry

In a different economic environment operates the refining industry (NACE code 19.20) as visible in Figure 3-12. The relative net surplus of installations spans only between minus 10 percent to plus 2 percent with the total surplus of this activity being negative.

This reflects an activity that is characterized by fairly stable outputs and technologies and thus provides preconditions that fit much better the static design of the mechanism that governs the allocation of free allocations in the EU ETS than the activities for steel and cement.

Figure 3-12 Distribution of the net surplus of free allowances for Refining of Mineral Oils



4 Understanding the priorities for a reform

The EU ETS at the cross-road

The evidence presented about the current state of EU ETS and the expected impacts of the current reform proposals point to two major deficiencies:

- From the overall perspective of the carbon market, the EU ETS will not sufficiently support building stable expectations about a carbon price that will guide production and investment decisions towards low-carbon structures.
- From the perspective of installations, the EU ETS will continue to add considerable uncertainty about the impact of carbon costs to profit margins and to competition both inside and outside the system.

Although the decision process in the European Parliament has further advanced, we want to emphasize that minor modifications in the amendments considered could at least reduce the impact of these deficiencies.

These suggested modifications are intended to make the EU ETS more transparent in its design, simpler in its administrate procedure, and ultimately more effective towards its intended role in EU climate policy.

4.1 Reducing uncertainties for individual installations

For many reasons the overall stringency of the EU ETS, the interaction between the supply and demand of allowances, which is a constituting feature of a cap-and-trade system, will remain unpredictable for the foreseeable future. This results above all from the high uncertainty of economic conditions over the near- and the long-term and the missing feature to account for business cycles in the current mechanism design. Additionally there is uncertainty that the Paris Agreement with the five years review cycle might trigger changes in the overall emissions cap.

There are, however, options to make the impact on installations more predictable. Basically these options eliminate some current rigidities in the design by introducing more flexibility in order to adjust to changing circumstances.

4.1.1 Fully dynamic allocation of free allowances

Aligning free allocations with actual production levels will reduce many uncertainties not only for installations but also contribute to a more predictable overall performance of the EU ETS.

We argue that with minor modification of the current setup such a procedure can be implemented which fully supports the cap-and-trade design, even lowers administrative burdens, maintains incentives for improving emissions performance, and adds transparency.

However, even in the absence of dynamic allocation a much closer alignment between emissions and allocations could be achieved by changing the threshold which triggers adjustments to allocation volumes.

Currently, such adjustments can only take place if production is reduced by 50% or more. The Phase 4 proposals suggest that this value could become lower and also apply to production increases. It follows that the lower this value is (preferably single digits), the better allocations would be aligned with actual emissions.

An operational procedure for dynamic allocation

The volume of free allowances allocated to an installation is based on a benchmark intensity and fully responds to actual production activity;

Free Allowances = Benchmark Intensity x Actual Production

This requires the following modifications of the administrative procedures:

- The installations obtain **ex ante a benchmark intensity** (free allocations per unit of output). This benchmark is valid for a trading period and may be determined according to the current procedures or in a more targeted manner.
- The **actual volume of free allowances is finalized ex post** during the verification procedure by multiplying this benchmark intensity with the actual output.
- There is **no need for an ex-ante determined cross-sectoral correction factor**. Only in the currently rather unlikely situation that the emissions budget for a trading period is exhausted, in sub-sequent years an ex-post correction factor needs to be applied.

Evaluation of the fully dynamic allocation procedure

In contrast to the current static procedure, the proposed dynamic allocation of free allowances eliminates a number of distortions:

- Changes in output have no impact on the carbon costs per unit of output and thus an important source for uncertainty is eliminated.
- No windfall gains can occur for installations from obtaining free allocations in excess over their actual emissions and therefore the competitive position among installations within a sector will not be changed.

This modified procedure for allocating free allowances also reduces administrative burdens since the actual allocation is shifted to the already existing yearly verification process. Installations obtain at the beginning of a trading period only a benchmark intensity, which will be determined by the benchmark procedure.

The fully dynamic allocation procedure maintains incentives for improving the emissions intensity, since allocations are based on the benchmark intensity and any improvements will result in allowances that can be sold on the carbon market.

How this procedure relates to the Commission's proposal

The suggested fully dynamic allocation procedure extends the Commission's proposal for adding flexibility to the allocation of free allowances in two respects:

- Instead of triggering adjustments of free allocations only after thresholds of production changes (e.g. 10 percent of benchmark production) are crossed, the fully flexible mechanism immediately responds with an allocation that reflects any output changes of the current year.
- In addition the suggested procedure for free allowances ties the allocation of free allowances to the verification procedure for emissions. Administrative authorities know about the verified volume of free allowances at the same time as verified emissions are reported.

The cons of dynamic allocation

These are some objections that are often raised when dynamic allocation of free allowances are discussed:

- Installations may have reduced incentives to improve their emissions performance.
- The administrative burden may increase.
- The overall emissions cap may get violated

The first two objections were already dealt with. The third one will be taken up in the following argumentation.

4.1.2 Compensating flexible shares of free allowances within an emissions budget

Flexibility in the allocation of free allowances requires compensating supply actions. We suggest a procedure that maintains the integrity of an emissions cap over a trading period but allows flexibility for free allocations within such a period.

A compensating supply procedure for maintaining an emissions budget

The share of freely allocated allowances, e.g. 43 percent of the target path cap in the Commission's proposal, should be referenced to emissions budgets of a trading period and not to annual volumes.

This requires the following actions of the Administrative Authorities:

- The **auctioning volume** is based on the agreed upon share of a trading period and remains fixed for each year.
- The **volume of allocated free allowances** is determined by the fully dynamic allocation procedure described in Section 4.1.1.
- Any **surplus or deficit between allocated and targeted free allowances** along the emissions cap is balanced by a reserve.
- Only if this reserve is exhausted, a **cross-sectoral correction factor** is ex-post triggered for the following years.
- Both the budgets for auctioning and the budget for free allocations are modified for endowing the Modernization and Innovation Fund, the New Entrants Reserve and free allocations to the power sector as outlined in the Commission's proposal.

How this procedure relates to the Commission's proposal

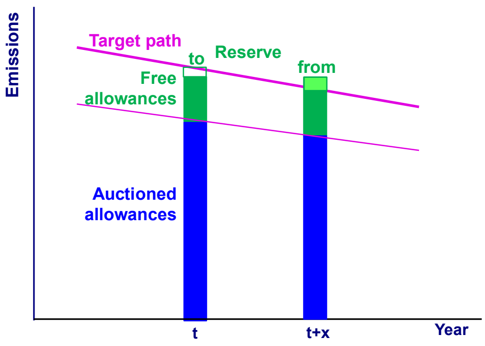
The Commission's proposal maintains the rigid partition of the supply of allowances via auctioning and free allocation, both volumes being to a large extent ex-ante determined.

The proposed compensating supply procedure keeps the ex-ante volumes for auctioning but allows fluctuations of the free allocations according to actual outputs.

This is illustrated in Figure 4-1. The path of the auctioning volume is predetermined by the agreed upon auctioning share over the whole trading period. The demand for free allowances results from the dynamic allocation procedure and is fully covered by an equal supply. If this supply volume is below the target supply, the balance is put into a reserve. Reversely if the needed supply exceeds the target volume the balance is taken from the reserve.

Only in the case of an empty reserve a cross-sectoral correction factor will be applied over the following years to the supplied free allowances.

Figure 4-1 Flexible supply of free allowances via a reserve



Evaluation of the compensating supply procedure

By balancing annual surpluses and deficits of free allowances with the trading period budget of free allowances, this procedure enables

- responding to increases and decreases of production activities via flexible allocations without violating the cap for free allowances,
- allocating not more free allowances than required via the proposed fully dynamic allocation procedure, and
- eliminating the need for the currently used cross-sectoral correction factor unless the emissions budget is exhausted.

Both the fully dynamic allocation of free allowances and the compensating flexible supply mechanism substantially contribute to lowering uncertainties for installations in the near- and the long-term because as well the stringency of the carbon market is more predictable as the carbon cost per unit of output.

These qualities, however, rely on a joint reform of the mechanism for allocating free allowances to installations and a corresponding modification of the supply of these allowances.

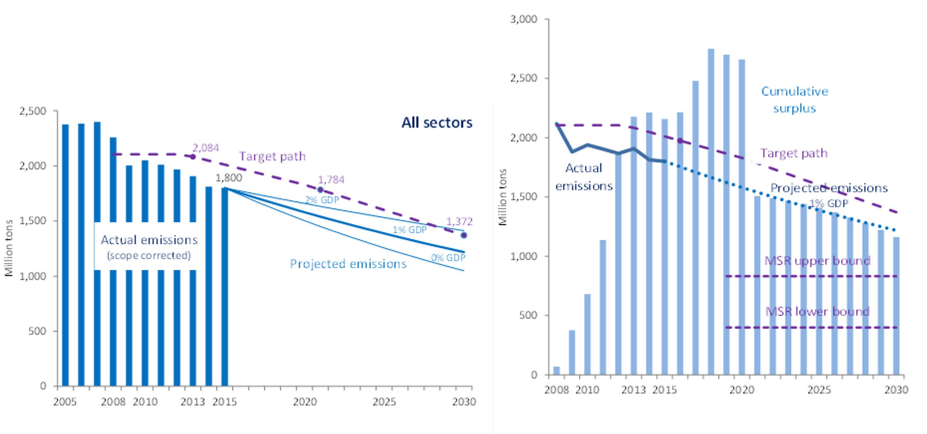
4.2 Enhancing the rigidity of the carbon market

Reducing in the EU ETS the huge gap between the supply and demand of allowances is a prerequisite for increasing the carbon price. If a noticeable price impact on production and investments is desired, then any reform of the EU ETS needs to tackle this issue.

4.2.1 Understanding the size of the supply surplus in the EU ETS

We summarize in Figure 4-2 the relevant information needed for understanding the size of the supply surplus.

Figure 4-2 Understanding the huge surplus of allowances in the EU ETS



The left chart depicts projected emissions under GDP growth assumptions between 0 and 2 percent per year up to 2030. Even under a rather unrealistic GDP rate of 2 percent actual emissions will remain under the target path of the system until 2020 and over most years in Phase 4. This supply surplus will continue up to 2030 except average annual GDP rates approach 2 percent.

These insights are reflected in the right chart which shows the large cumulative surplus of allowances and the intervention parameters of the Market Stability Reserve. The cumulative surplus is already exceeds annual emissions and will continue to rise. It is highly unlikely that in Phase 4 the upper intervention bound of the Market Stability Reserve will be reached.

4.2.2 Reducing the size of the supply surplus in the EU ETS

There are several options for reducing the size of the supply surplus in the EU ETS which should be tied into a package

.

Linear Reduction Factor

The currently proposed value of 2.2 percent per year for the Linear Reduction Factor could be increased to 2.4 percent. Although this would increase the ambition for emissions reductions, the impact on the cumulative surplus would be modest.

Market Stability Reserve

A higher intake rate for the currently proposed 12 percent in the Market Stability Reserve could be taken, e.g. 24 percent.

Unused allowances of Phase 3

All not used allowances of Phase 3 could be put into the Market Stability Reserve.

Rebasing the emissions cap

The most effective measure would be to rebase the emissions cap in 2021 to reflect actual emissions in 2020.

4.3 Other reform issues

We briefly address some other reform issues which seem to have gotten considerable attention although they are not that significant for reducing uncertainties for installations and enhancing the rigidity of the carbon market.

Tiering the installations in the Carbon Leakage List

The combined indicator for including installations in the Carbon Leakage List and for tiering them according to the exposure to competitive distortions is

(emissions intensity) x (trade intensity)

Both the choice of this indicator and the thresholds attached are extremely ad hoc and in particular vulnerable with respect to value added data needed for obtaining the emissions intensity.

Although the concept of tiering has merits, it is the operational implementation which creates additional uncertainties and conflicts.

Cross-sectoral correction factor

The debate about a cross-sectoral correction factor needs to be put in context with the partition of the industry cap between auctioning and free allocations.

As soon as full dynamic allocation of free allowances is introduced together with responding flexibility within the cap for free allowances, there is most probably no need for applying such a correction factor.

Updating of benchmarks

Sector benchmarks should be updated on the basis of real performance. This can be done by collecting the emissions and outputs that are monitored during the verification procedure. This information is also needed for dynamic allocation of free allowances.

Small emitters

73 percent of installations emit less than 50 thousand tons and account for only 5 percent of total emissions.

An increased threshold for opt-out would significantly lower the administrative burden.

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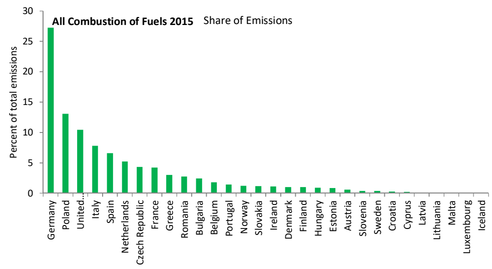
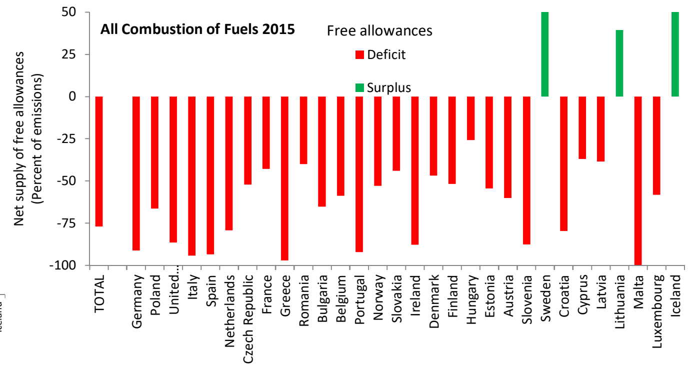
6 Appendix: Visualizing the structure of EU ETS

6.1 All Combustion of Fuels (Activity 20)

2015





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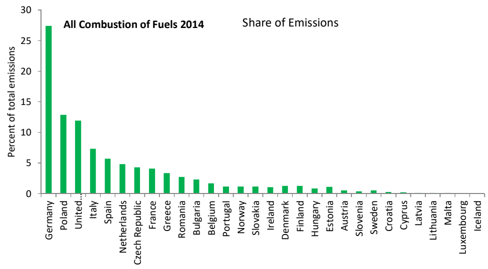
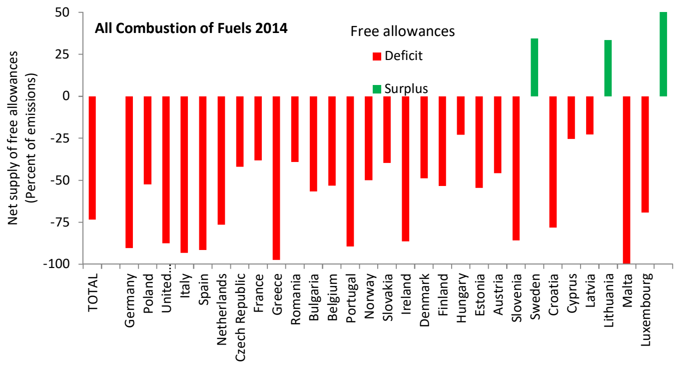
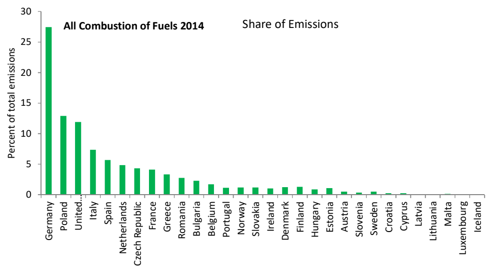
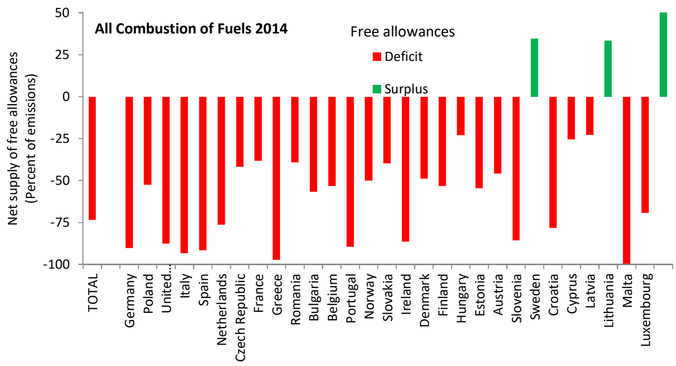




2013

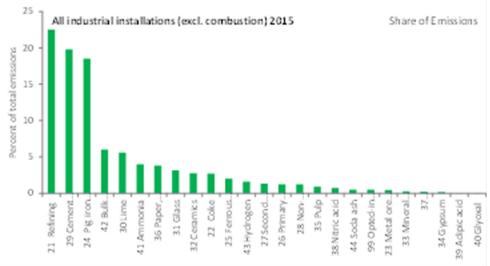


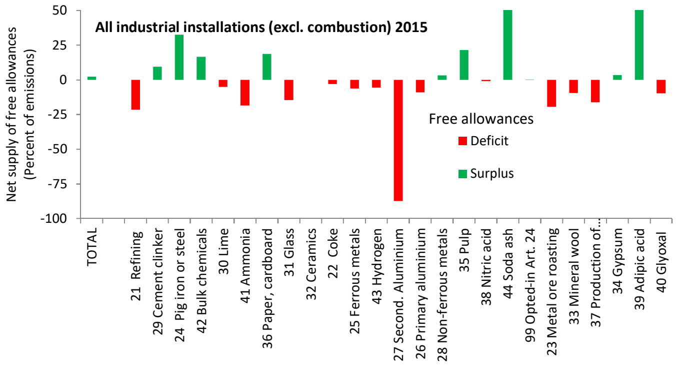


6.2 All Industrial Sectors (Activity 21 – 99)

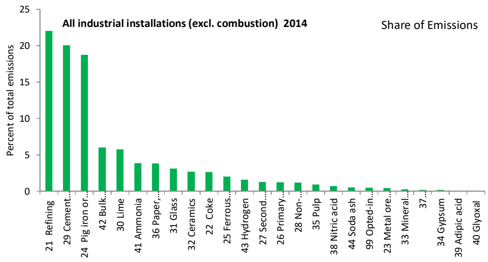
6.2.1 All Industrial Sectors by Activities

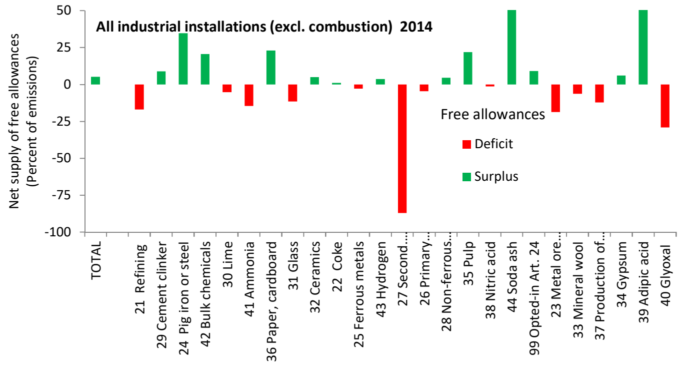
2015



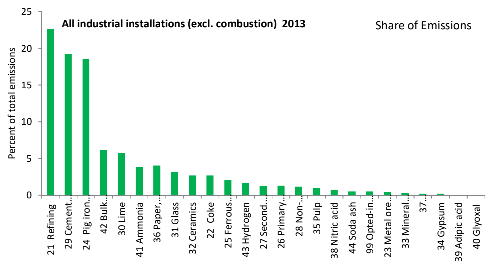


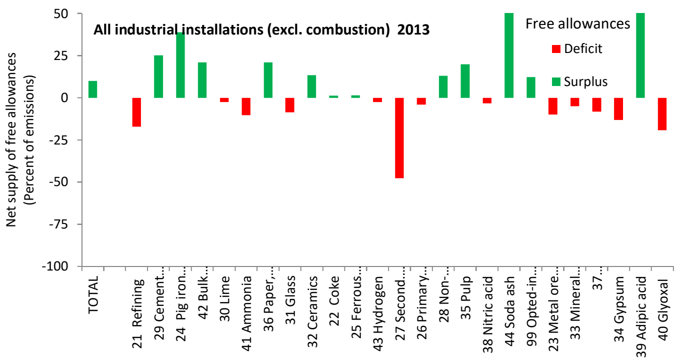
2014





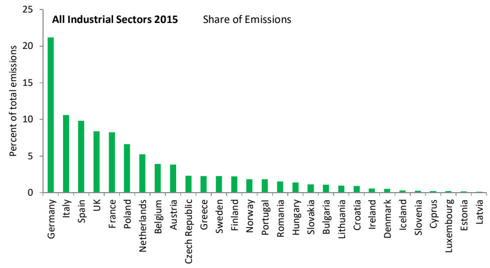
2013

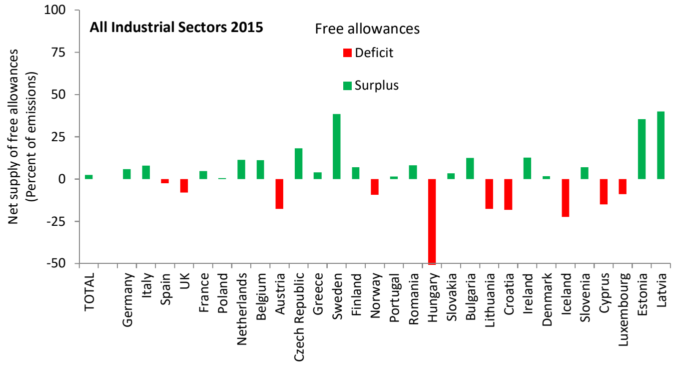




6.2.2 All Industrial Sectors by Countries

2015





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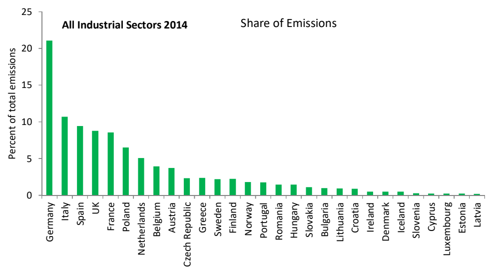

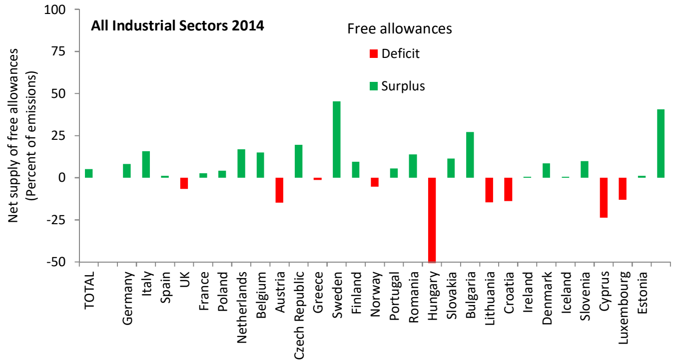

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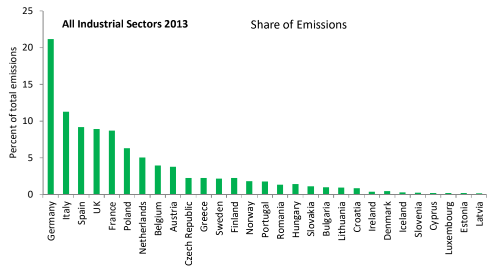
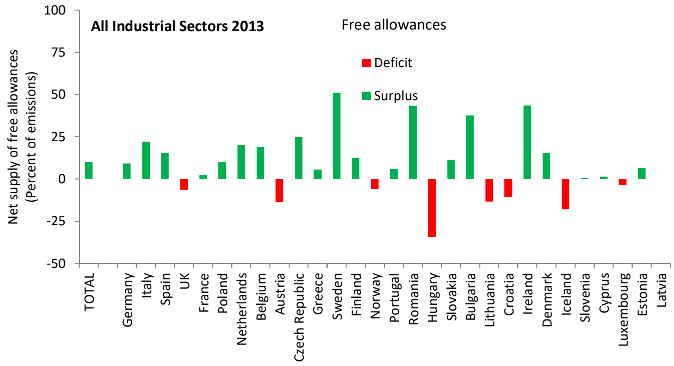
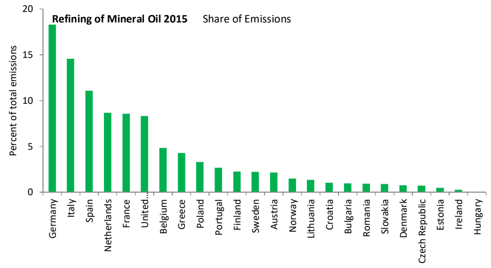


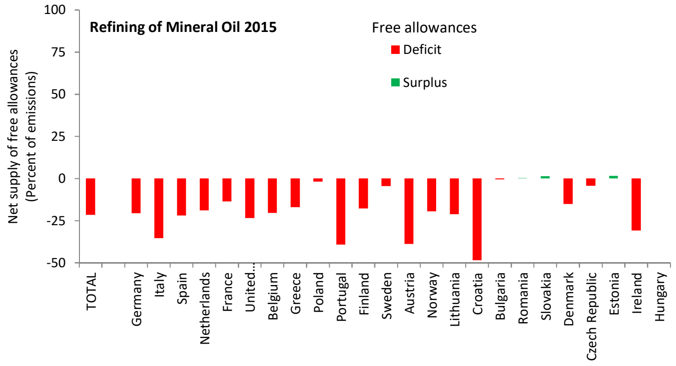


6.2.3 Biggest Industrial Activities

All Refining of Mineral Oil (Activity 21)

2015





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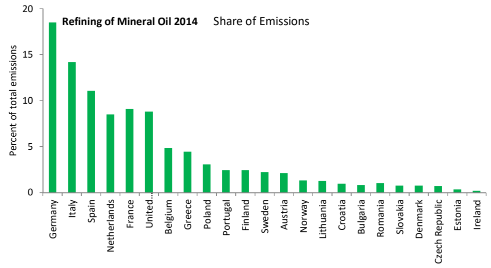

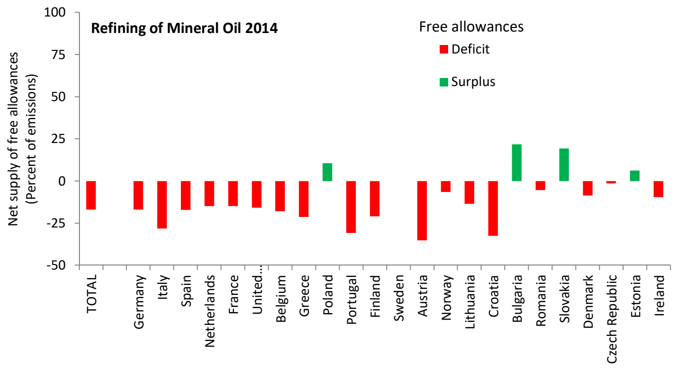

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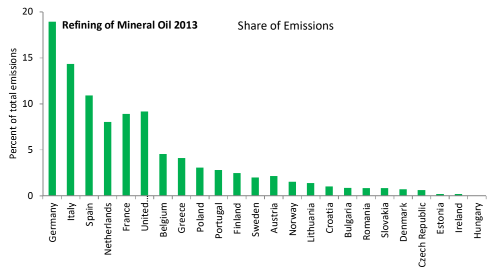
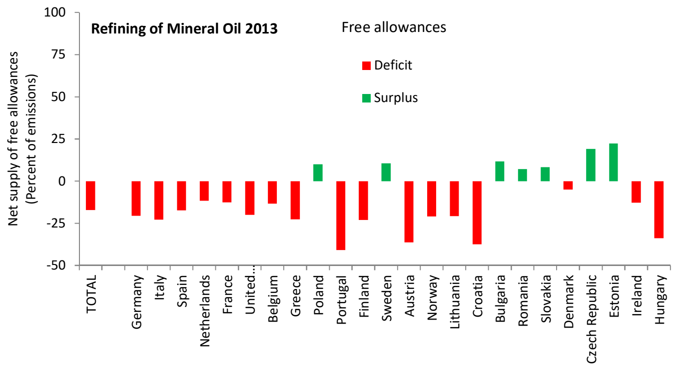
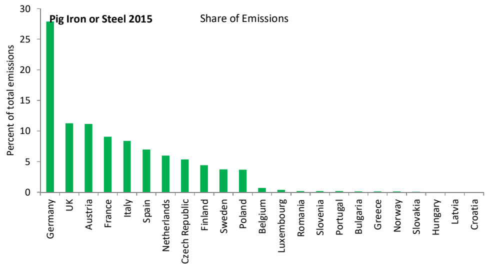
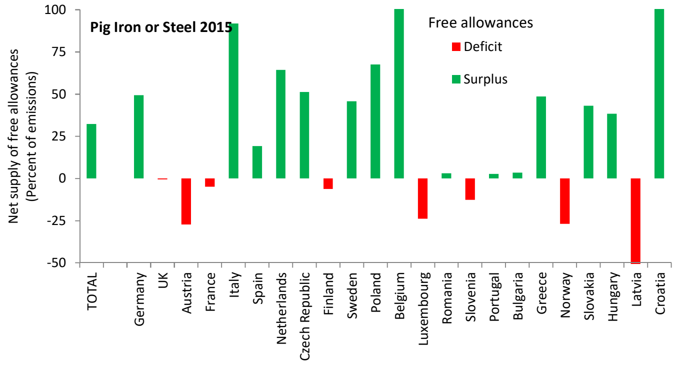




All Production of Pig Iron or Steel (Activity 24)

2015





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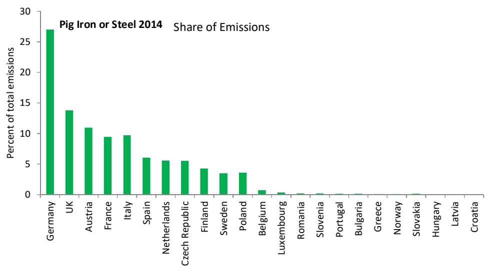

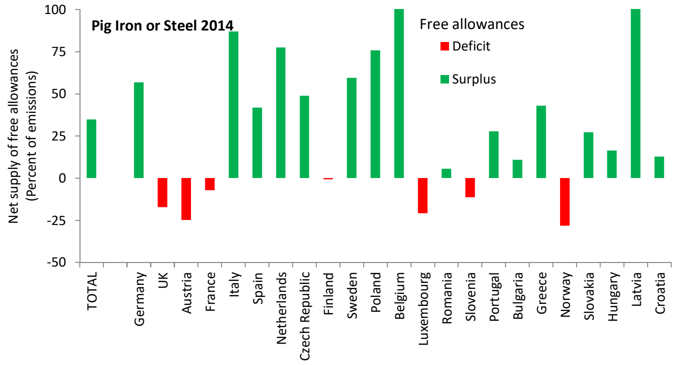

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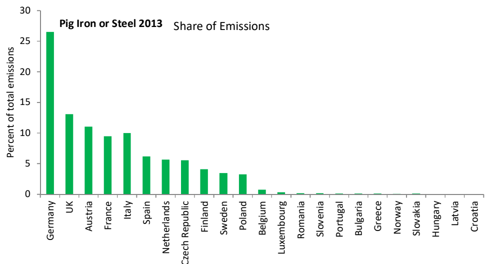
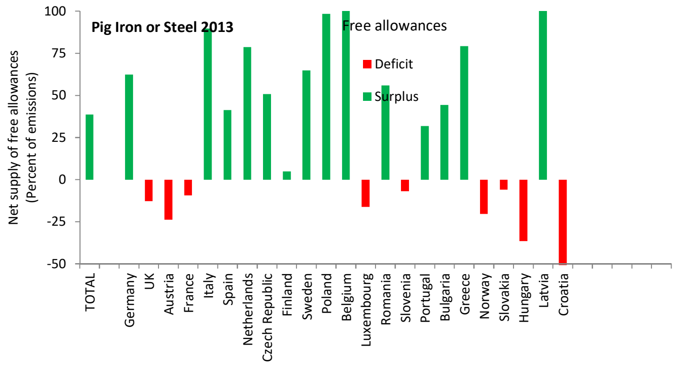
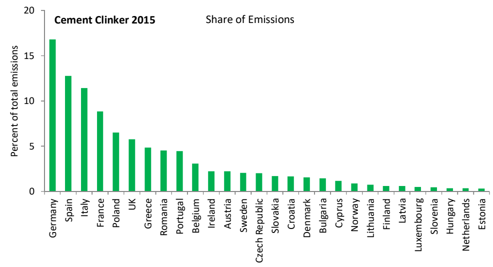
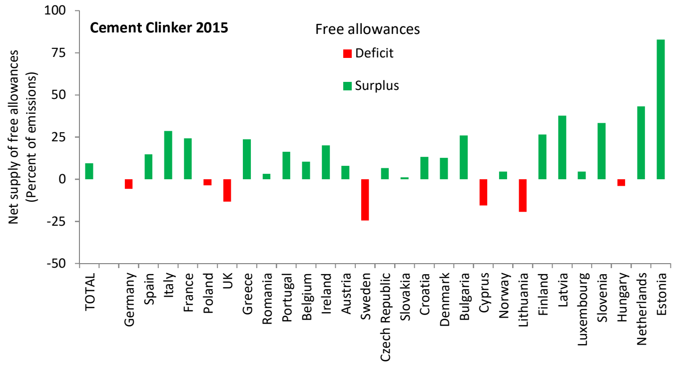




All Production of Cement Clinker (Activity 29)

2015





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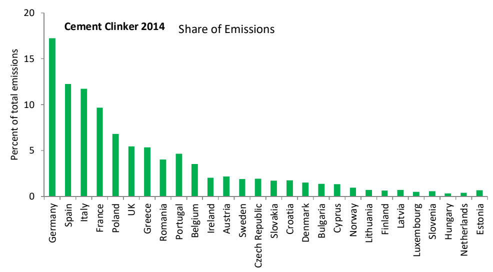

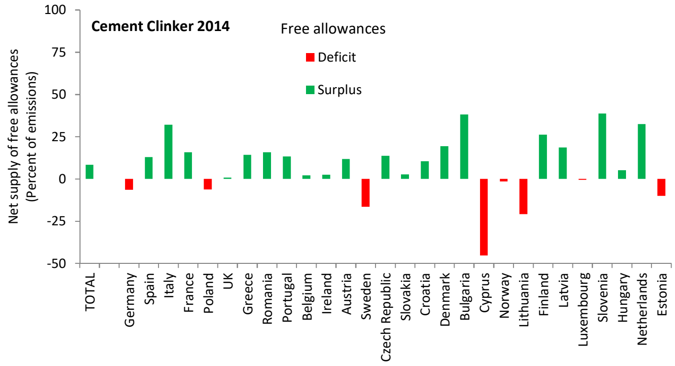

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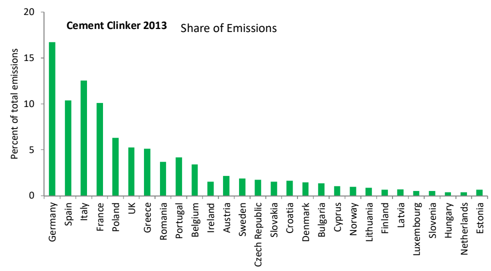

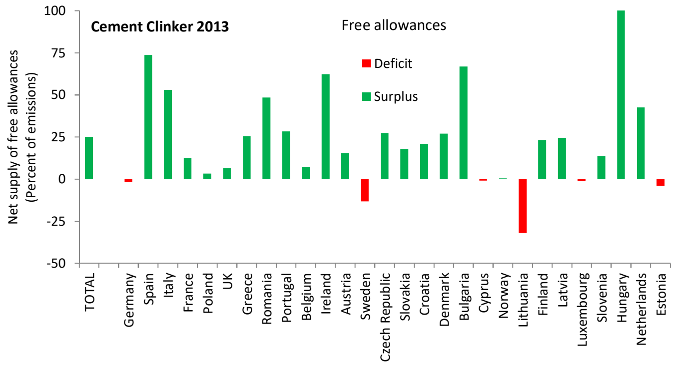

7 Appendix: Key data of the EU ETS

7.1 All countries

Table 7-1 All countries – Overall position

All Countries [kt CO2]	Ø2005-2007	Ø2008-2012	2013	2014	2015
All stationary installations					
Verified emissions	2,071,533	1,941,900	1,908,208	1,813,560	1,800,373
Share of freely allocated	*102%*	*103%*	*53%*	*52%*	*48%*
All combustion of fuels					
Verified emissions	1,494,598	1,412,479	1,331,917	1,237,110	1,225,417
Share of freely allocated	*98%*	*91%*	*28%*	*27%*	*23%*
All industrial sectors					
Verified emissions	576,935	529,421	576,291	576,450	574,956
Share of freely allocated	*112%*	*135%*	*110%*	*105%*	*102%*
Aviation					
Verified emissions		16,794	53,488	54,807	56,999
Share of freely allocated		*207%*	*60%*	*59%*	*57%*

Table 7-2 All countries – Industrial sectors

All Countries [kt CO2]	Ø2005-2007	Ø2008-2012	2013	2014	2015
All stationary installations					
All refining of mineral oil					
Verified emissions	142,226	134,425	130,327	127,111	129,603
Share of freely allocated	*105%*	*108%*	*83%*	*83%*	*79%*
All production of coke					
Verified emissions	14,649	13,074	15,610	15,325	15,628
Share of freely allocated	*114%*	*120%*	*101%*	*101%*	*97%*
All metal ore roasting or sintering					
Verified emissions	6,538	2,457	2,393	2,546	2,521
Share of freely allocated	*206%*	*117%*	*90%*	*81%*	*81%*
All production of pig iron or steel					
Verified emissions	117,168	103,253	106,902	108,128	106,388
Share of freely allocated	*120%*	*170%*	*139%*	*135%*	*132%*
Production or processing of ferrous metals					
Verified emissions	8,424	5,911	11,793	11,836	11,686
Share of freely allocated	*106%*	*204%*	*101%*	*97%*	*94%*
Production of primary aluminum					
Verified emissions	344	279	7,361	7,158	7,157
Share of freely allocated	*150%*	*163%*	*96%*	*95%*	*91%*
Production of secondary aluminum					
Verified emissions	6,429	6,430	7,334	7,504	7,544
Share of freely allocated	*108%*	*77%*	*52%*	*13%*	*13%*
Production or processing of non-ferr. met.					
Verified emissions	480	673	6,692	6,978	6,991
Share of freely allocated	*115%*	*133%*	*113%*	*105%*	*103%*
All production of cement clinker					
Verified emissions	154,360	128,543	110,949	115,814	113,776
Share of freely allocated	*102%*	*136%*	*125%*	*109%*	*110%*
Production of lime, calcination of magnesit					
Verified emissions	34,687	32,965	33,045	33,121	32,157
Share of freely allocated	*114%*	*134%*	*97%*	*95%*	*95%*
All manufacture of glass					
Verified emissions	19,800	19,249	18,002	18,052	18,161
Share of freely allocated	*111%*	*123%*	*91%*	*89%*	*85%*
All manufacture of ceramics					
Verified emissions	17,459	13,605	15,521	15,410	15,717
Share of freely allocated	*118%*	*168%*	*114%*	*105%*	*100%*
All manufacture of mineral wool					
Verified emissions	766	1,511	1,634	1,631	1,636
Share of freely allocated	*113%*	*142%*	*95%*	*94%*	*91%*
Production or processing of gypsum					
Verified emissions	102	294	1,101	1,080	1,083
Share of freely allocated	*106%*	*137%*	*87%*	*106%*	*103%*
Production of pulp					
Verified emissions	6,259	5,741	5,709	5,407	5,144
Share of freely allocated	*150%*	*150%*	*120%*	*122%*	*122%*
All production of paper or cardboard					
Verified emissions	27,826	25,332	23,131	22,011	21,953
Share of freely allocated	*121%*	*135%*	*121%*	*123%*	*119%*

Table 7-2 All countries – Industrial sectors (continued)

All Countries [kt CO2]	Ø2005-2007	Ø2008-2012	2013	2014	2015
All stationary installations					
Production of carbon black					
Verified emissions	3	1,115	1,139	1,165	1,196
Share of freely allocated		*116%*	*92%*	*88%*	*84%*
Production of nitric acid					
Verified emissions	707	879	4,276	4,146	4,054
Share of freely allocated	*109%*	*115%*	*97%*	*99%*	*99%*
Production of adipic acid					
Verified emissions	0	0	142	144	136
Share of freely allocated			*767%*	*743%*	*774%*
Production of glyoxal and glyoxylic acid					
Verified emissions	0	0	10	12	9
Share of freely allocated			*81%*	*71%*	*90%*
Production of amonia					
Verified emissions	2,022	1,958	22,327	22,315	22,797
Share of freely allocated	*134%*	*145%*	*90%*	*85%*	*81%*
Production of bulk chemicals					
Verified emissions	14,145	28,529	35,408	34,734	34,582
Share of freely allocated	*124%*	*131%*	*121%*	*121%*	*117%*
Production of hydrogen and synthesis gas					
Verified emissions	1,525	1,642	9,804	9,055	9,215
Share of freely allocated	*114%*	*118%*	*97%*	*104%*	*94%*
Production of soda ash and sodium bicar.					
Verified emissions	672	620	2,868	2,982	2,950
Share of freely allocated	*113%*	*107%*	*185%*	*175%*	*173%*
Capture of GHG underDirective 2009/31/EC					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Other activity opted-in under Art. 24					
Verified emissions	342	937	2,812	2,785	2,872
Share of freely allocated	*127%*	*156%*	*112%*	*109%*	*100%*

7.2 Austria

Table 7-3 Austria – Overall position

Austria [kt CO2]	Ø2005-2007	Ø2008-2012	2013	2014	2015
All stationary installations					
Verified emissions	**32,503**	**29,869**	**29,858**	**28,056**	**29,492**
Share of freely allocated	*100%*	*107%*	*75%*	*78%*	*71%*
All combustion of fuels					
Verified emissions	15,313	14,220	8,075	6,426	7,514
Share of freely allocated	*94%*	*100%*	*45%*	*54%*	*40%*
All industrial sectors					
Verified emissions	17,190	15,649	21,783	21,630	21,978
Share of freely allocated	*106%*	*113%*	*86%*	*85%*	*82%*
Aviation					
Verified emissions		409	1,017	1,025	1,005
Share of freely allocated		*472%*	*56%*	*55%*	*56%*

Table 7-4 Austria – Industrial sectors

Austria [kt CO2]	Ø2005-2007	Ø2008-2012	2013	2014	2015
All stationary installations					
All refining of mineral oil					
Verified emissions	2,842	2,789	2,827	2,713	2,804
Share of freely allocated	*96%*	*98%*	*64%*	*65%*	*61%*
All production of coke					
Verified emissions	1,217	865	0	0	0
Share of freely allocated	*109%*	*114%*			
All metal ore roasting or sintering					
Verified emissions	0	0	0	0	0
Share of freely allocated					
All production of pig iron or steel					
Verified emissions	6,214	5,634	11,755	11,693	11,870
Share of freely allocated	*111%*	*123%*	*76%*	*75%*	*73%*
Production or processing of ferrous metals					
Verified emissions	0	0	198	201	188
Share of freely allocated			*89%*	*86%*	*90%*
Production of primary aluminum					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Production of secondary aluminum					
Verified emissions	0	0	50	52	60
Share of freely allocated			*78%*	*82%*	*85%*
Production or processing of non-ferr. met.					
Verified emissions	0	0	53	54	56
Share of freely allocated			*89%*	*87%*	*86%*
All production of cement clinker					
Verified emissions	2,963	2,671	2,456	2,462	2,533
Share of freely allocated	*94%*	*107%*	*116%*	*113%*	*108%*
Production of lime, calcination of magnesit					
Verified emissions	1,182	1,147	1,206	1,177	1,121
Share of freely allocated	*112%*	*105%*	*104%*	*105%*	*108%*
All manufacture of glass					
Verified emissions	215	206	204	194	193
Share of freely allocated	*100%*	*103%*	*97%*	*100%*	*95%*
All manufacture of ceramics					
Verified emissions	462	377	343	343	342
Share of freely allocated	*108%*	*131%*	*113%*	*103%*	*106%*
All manufacture of mineral wool					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Production or processing of gypsum					
Verified emissions	0	0	50	49	49
Share of freely allocated			*101%*	*125%*	*124%*
Production of pulp					
Verified emissions	540	433	381	440	438
Share of freely allocated	*123%*	*131%*	*143%*	*126%*	*123%*
All production of paper or cardboard					
Verified emissions	1,486	1,429	1,241	1,110	1,206
Share of freely allocated	*116%*	*108%*	*115%*	*123%*	*111%*

Table 7-4 Austria – Industrial sectors *(continued)*

Austria [kt CO2]	Ø2005-2007	Ø2008-2012	2013	2014	2015
All stationary installations					
Production of carbon black					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Production of nitric acid					
Verified emissions	0	33	49	48	47
Share of freely allocated		*435%*	*328%*	*326%*	*328%*
Production of adipic acid					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Production of glyoxal and glyoxylic acid					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Production of amonia					
Verified emissions	0	0	791	925	897
Share of freely allocated			*88%*	*74%*	*75%*
Production of bulk chemicals					
Verified emissions	71	46	66	60	61
Share of freely allocated	*115%*	*167%*	*180%*	*197%*	*190%*
Production of hydrogen and synthesis gas					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Production of soda ash and sodium bicar.					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Capture of GHG underDirective 2009/31/EC					
Verified emissions	0	0	0	0	0
Share of freely allocated					
Other activity opted-in under Art. 24					
Verified emissions	0	20	115	109	114
Share of freely allocated		*111%*	*88%*	*91%*	*86%*

8 Appendix: Installations of Austria

Table 8-1 Installations of Austria

	Verified Emissions [t CO2] and Share of Free Allowances [%]							
Installation	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
5 Production of pig iron or steel (primary or secondary fusion)								
Breitenfelder Edelstahl Mitterdorf	17,523	16,815	15,963	19,328	16,434	19,734	18,498	17,366
	80%	*102%*	*166%*	*137%*	*161%*	*77%*	*80%*	*84%*
Stahlproduktion Böhler Edelstahl Kapfenberg	33,049	21,612	30,709	32,771	32,720	129,491	129,553	120,119
	101%	*154%*	*109%*	*102%*	*102%*	*95%*	*93%*	*98%*
Stahlwerk Marienhütte GmbH	29,149	28,656	25,707	24,423	25,611	38,756	37,540	38,492
	104%	*106%*	*118%*	*124%*	*119%*	*123%*	*123%*	*116%*

Table 8-1 Installations of Austria (continued)

Verified Emissions [t CO2] and Share of Free Allowances [%]

Installation	2008	2009	2010	2011	2012	2013	2014	2015
8-Manufacture of ceramic products by firing								
Veitsch-Radex Veitsch	15,718	10,357	14,089	13,199	10,085	10,762	12,793	10,484
	102%	*154%*	*113%*	*121%*	*159%*	*144%*	*119%*	*143%*
Wienerberger Blindenmarkt	0	0	0	0	0	0	0	0
Ziegelwerk Danreiter Ried im Innkreis	3,670	2,904	2,861	4,162	4,082	4,017	3,064	3,075
	161%	*204%*	*207%*	*142%*	*145%*	*87%*	*112%*	*110%*
Veitsch-Radex Trieben	22,490	16,864	21,887	23,157	22,828	21,605	15,997	20,411
	105%	*140%*	*108%*	*102%*	*104%*	*98%*	*130%*	*100%*
Veitsch-Radex Radenthein	75,296	66,065	73,221	71,225	71,994	74,623	73,104	72,522
	111%	*127%*	*114%*	*118%*	*116%*	*96%*	*96%*	*96%*
Tondach Pinkafeld	16,563	12,665	12,141	12,678	11,165	7,286	8,783	7,509
	98%	*129%*	*134%*	*128%*	*146%*	*176%*	*143%*	*165%*
Tondach Gleinstätten	24,339	20,052	22,887	22,895	22,603	23,601	24,124	22,927
	105%	*127%*	*111%*	*111%*	*113%*	*94%*	*90%*	*93%*
Wienerberger Fürstenfeld	7,428	6,014	7,300	8,221	6,708	4,783	3,935	5,278
	137%	*169%*	*140%*	*124%*	*152%*	*196%*	*161%*	*86%*
Wienerberger Rotenturm	2,881	2,586	2,617	2,541	2,416	2,342	1,768	1,480
	127%	*142%*	*140%*	*144%*	*151%*	*145%*	*189%*	*222%*
Wienerberger Krengelbach Haiding	19,555	20,457	18,313	28,933	27,493	24,879	28,004	25,928
	134%	*128%*	*143%*	*90%*	*95%*	*88%*	*76%*	*81%*
Wienerberger Laa Thaya	11,501	0	0	0	0	0	0	0
	151%							
Wienerberger Hennersdorf	18,224	15,084	15,272	23,148	21,309	22,625	21,642	22,716
	131%	*158%*	*156%*	*103%*	*112%*	*78%*	*80%*	*75%*
Wienerberger Göllersdorf	14,668	8,922	12,199	18,126	17,817	15,099	18,004	18,363
	121%	*198%*	*145%*	*98%*	*99%*	*110%*	*91%*	*88%*
Wienerberger Helpfau Uttendorf	5,648	5,809	5,812	5,248	5,659	5,721	6,157	6,550
	122%	*119%*	*119%*	*132%*	*122%*	*103%*	*94%*	*87%*
Wienerberger Knittelfeld (Apfelberg)	8,914	7,891	9,861	11,528	8,887	9,467	10,887	10,384
	100%	*113%*	*90%*	*77%*	*100%*	*104%*	*89%*	*92%*
Ziegelwerk Lizzi Erlach	932	1,027	768	502	566	604	450	485
	172%	*156%*	*209%*	*320%*	*284%*	*132%*	*174%*	*159%*
Ziegelwerk Eder Weibern	23,469	25,982	21,385	18,518	16,048	9,480	14,027	13,786
	93%	*84%*	*102%*	*118%*	*136%*	*232%*	*86%*	*154%*
Ziegelwerk Eder Peuerbach Bruck	18,364	23,712	20,662	19,990	17,495	14,793	17,012	17,204
	162%	*126%*	*144%*	*149%*	*170%*	*122%*	*104%*	*147%*
Ziegelwerk Eberschwang	3,797	2,473	3,493	2,687	2,742	2,712	2,398	0
	102%	*157%*	*111%*	*144%*	*141%*	*128%*	*143%*	
Ziegelwerk Brenner Wirth St. Andrä	6,523	1,015	2,789	4,476	6,674	7,939	6,403	9,392
	148%	*953%*	*347%*	*216%*	*145%*	*106%*	*129%*	*86%*
Ziegelwerk Weindl Steyr	2,403	2,011	1,625	0	0	0	0	0
	120%	*143%*	*177%*					
Hilti Mettauer Götzis	3,464	3,094	2,053	0	0	0	0	0
	133%	*149%*	*225%*					
Ziegelwerk Frixeder Senftenbach	12,322	12,592	13,265	15,885	15,808	16,206	15,334	13,102
	110%	*108%*	*125%*	*93%*	*94%*	*79%*	*82%*	*94%*
Ziegelwerk Nicoloso Pottenbrunn	230	0	0	74	68	0	0	0
	428%			*1331%*	*1449%*			
Leitl Spannton Eferding	19,772	15,558	15,592	15,706	15,687	15,502	14,507	14,574
	108%	*137%*	*137%*	*136%*	*136%*	*115%*	*121%*	*118%*
Ziegelwerk Obermair Neuhofen	1,762	1,396	1,430	1,503	1,370	1,633	1,366	1,358
	93%	*118%*	*115%*	*109%*	*120%*	*98%*	*115%*	*114%*
Comelli Ziegel Kirchbach Maxendorf	8,345	8,144	8,319	8,257	4,344	4,548	3,759	6,146
	162%	*166%*	*162%*	*163%*	*310%*	*143%*	*170%*	*77%*
Ziegelwerk Martin Pichler Aschach	9,004	6,370	7,182	8,621	8,473	6,246	6,068	7,568
	152%	*214%*	*190%*	*158%*	*161%*	*136%*	*137%*	*108%*

Table 8-1 Installations of Austria (continued)

Installation	Verified Emissions [t CO2] and Share of Free Allowances [%]							
	2008	2009	2010	2011	2012	2013	2014	2015
20 Combustion of fuels								
RAG Erdgasspeicheranlage 7Fields - Nussdorf	0	0	0	0	0	1,638	833	979
						68%	131%	109%
RAG Erdgasspeicheranlage Haidach	0	0	0	0	0	1,912	1,115	1,525
						29%	49%	35%
TAG Verdichterstation Grafendorf	0	0	0	0	0	151,805	109,266	140,628
						70%	87%	60%
TAG Verdichterstation Weitendorf	0	0	0	0	0	45,545	36,496	39,336
						96%	107%	88%
TAG Verdichterstation Ruden	0	0	0	0	0	141,999	104,583	133,932
						76%	92%	64%
TAG Verdichterstation Eggendorf	0	0	0	0	0	36,270	15,491	14,832
						54%	114%	105%
TAG Verdichterstation Baumgarten	0	0	0	0	0	190,415	152,420	194,214
						70%	79%	55%
WAG Verdichterstation Rainbach	0	0	0	0	0	11,815	47,922	46,596
						106%	23%	21%
WAG Verdichterstation Kirchberg	0	0	0	0	0	5,464	34,889	13,205
						34%	5%	11%
WAG Verdichterstation Baumgarten	0	0	0	0	0	21,636	450	174
						187%	4022%	0%
Stadtwärme Lienz - Notfallheizwerk Lienz III	0	0	0	0	0	0	0	0
FHKW Arsenal 2	0	0	0	0	0	0	6,870	3,588
							0%	0%
Crystal Energy GuD Wattens	0	0	0	0	0	0	32,286	40,942
							0%	0%
RAG Erdgasspeicheranlage Puchkirchen	0	0	0	0	0	36,353	26,244	23,731
						72%	99%	107%
AMAG Service Ranshofen	6,984	6,849	7,221	6,445	6,435	7,706	7,093	5,872
	131%	134%	127%	142%	142%	5%	5%	5%
AMI Agrolinz Melamine International Linz	83,444	77,625	73,867	63,007	62,144	48,421	53,648	52,815
	102%	110%	115%	135%	137%	502%	442%	439%
AGRANA Leopoldsdorf	76,793	78,869	81,895	80,142	72,464	74,739	81,039	91,828
	100%	98%	94%	96%	106%	89%	80%	70%
AGRANA Tulln	85,061	89,437	99,409	97,349	89,345	77,313	88,501	100,752
	102%	97%	88%	89%	97%	131%	113%	97%
AGRANA Aschach	76,343	77,710	81,800	81,065	81,114	82,073	81,011	79,640
	98%	96%	92%	92%	92%	70%	70%	70%
AGRANA Gmünd	34,781	33,803	33,695	34,599	36,080	34,683	34,693	35,812
	97%	100%	100%	98%	94%	83%	79%	76%
Fritz Egger Unterradlberg	12,834	11,453	12,419	12,975	11,983	12,088	11,867	11,520
	107%	120%	111%	106%	115%	626%	624%	434%
Energie- und Medienzentrale Heiligenkreuz	62,030	66,936	64,579	79,294	80,680	74,843	77,996	76,218
	101%	94%	97%	79%	95%	74%	70%	70%
EVN Cogen Salzer St. Pölten	47,839	37,356	35,725	30,369	29,718	28,808	29,480	35,744
	89%	114%	119%	141%	144%	112%	105%	83%
FHKW Graz	13,657	20,417	44,443	20,838	31,596	34,448	30,960	35,998
	175%	117%	54%	115%	76%	75%	75%	57%
FHKW Süd Inzersdorf	4,819	3,190	2,232	2,017	21,164	64,742	45,943	31,223
	144%	218%	311%	345%	33%	4%	5%	7%
Energie-Contracting Steyr	18,377	15,389	19,223	14,666	12,388	9,483	6,969	7,941
	131%	156%	125%	164%	194%	146%	177%	138%
KW Timelkam II	155,557	16,798	9,696	3,781	11,240	24,792	20,667	11,131
	110%	224%	388%	995%	335%	127%	136%	224%
KW Riedersbach	730,397	342,118	310,019	253,226	208,067	206,401	236,873	270,681
	60%	128%	141%	173%	210%	4%	3%	2%
FW Kirchdorf	13,855	13,785	15,856	13,961	15,473	18,654	17,509	14,754
	99%	99%	86%	98%	88%	54%	52%	55%
KW Timelkam III	16,845	306	0	0	0	0	0	0
	37%	2048%						

Table 8-1 Installations of Austria (continued)

Installation	2008	2009	2010	2011	2012	2013	2014	2015
	Verified Emissions [t CO2] and Share of Free Allowances [%]							
20 Combustion of fuels								
Kaindl Holzindustrie Wals	70,919	56,220	59,204	49,880	45,801	40,234	25,262	20,813
	128%	*161%*	*153%*	*182%*	*198%*	*361%*	*564%*	*442%*
DSM Fine Chemicals Austria Linz	31,412	30,236	21,485	18,911	22,732	94,294	94,318	93,010
	100%	*104%*	*151%*	*172%*	*140%*	*96%*	*94%*	*94%*
Isomax Dekorative Laminate Wiener Neudorf	23,865	24,304	25,117	25,940	25,475	30,819	29,079	28,969
	115%	*113%*	*109%*	*105%*	*107%*	*85%*	*88%*	*87%*
FHKW Thondorf	56,233	57,343	67,935	61,734	47,954	28,440	15,358	14,399
	160%	*157%*	*132%*	*145%*	*187%*	*61%*	*25%*	*0%*
CMOÖ GuD Anlage Laakirchen	240,789	234,321	236,053	238,288	227,591	159,977	129,499	116,886
	101%	*104%*	*103%*	*102%*	*107%*	*4%*	*4%*	*4%*
Salzburg AG FHKW Nord Salzburg	56,928	56,009	53,194	41,109	43,014	38,286	39,473	39,411
	109%	*111%*	*117%*	*151%*	*144%*	*85%*	*72%*	*64%*
Salzburg AG FHKW Mitte Salzburg	183,430	172,716	188,359	173,642	138,093	137,326	110,340	126,649
	99%	*105%*	*96%*	*104%*	*131%*	*10%*	*12%*	*9%*
TEICH AG Weinburg	10,342	10,356	10,760	11,386	12,272	25,276	24,257	25,271
	105%	*105%*	*101%*	*95%*	*89%*	*57%*	*54%*	*46%*
OMV Gasstation Aderklaa I	30,659	35,050	30,638	27,756	30,043	35,433	34,107	34,577
	93%	*81%*	*93%*	*103%*	*95%*	*101%*	*103%*	*100%*
OMV Gasstation Aderklaa II	16,785	19,353	16,192	13,843	12,675	15,883	15,249	21,180
	85%	*73%*	*88%*	*103%*	*112%*	*92%*	*94%*	*66%*
FHKW Spittelau Fernwärne Wien	19,327	26,593	32,651	24,711	67,700	80,408	39,484	21,745
	76%	*55%*	*45%*	*59%*	*22%*	*26%*	*47%*	*76%*
FHKW Dornach Linz AG Linz	12	52	23	16	9	8	221	7
	1183%	*273%*	*617%*	*888%*	*1578%*	*0%*	*0%*	*0%*
LS FHKW Süd Linz	320,284	214,884	187,471	153,335	141,207	128,258	111,486	120,859
	96%	*143%*	*164%*	*200%*	*217%*	*56%*	*57%*	*47%*
FHKW Arsenal Fernwärme Wien	11,275	27,700	2,684	396	4,522	16,666	20,746	0
	44%	*18%*	*186%*	*1262%*	*111%*	*22%*	*32%*	
LS FHKW Mitte Linz Linie 1a	237,908	198,981	190,586	153,809	101,870	146,969	77,873	111,369
	115%	*137%*	*143%*	*177%*	*268%*	*83%*	*140%*	*87%*
FW Leopoldau Fernwärme Wien	10,359	2,593	3,766	385	5,474	46,068	39,383	30,146
	33%	*132%*	*91%*	*892%*	*63%*	*5%*	*5%*	*6%*
FHKW Kagran Fernwärme Wien	3,180	6,581	3,796	1,010	1,426	2,619	25	6
	154%	*75%*	*129%*	*486%*	*344%*	*71%*	*13248%*	*0%*
FWZ Voitsberg	6,916	8,034	9,032	7,786	7,698	11,838	13,314	13,251
	300%	*258%*	*229%*	*266%*	*269%*	*4%*	*40%*	*35%*
FHKW Nord StW St. Pölten	52,183	46,566	31,006	30,788	30,801	32,431	30,003	32,831
	101%	*114%*	*171%*	*172%*	*172%*	*108%*	*105%*	*85%*
FHKW Süd StW St. Pölten	13,945	15,507	8,462	1,203	1,704	2,169	1,467	1,471
	103%	*92%*	*169%*	*1188%*	*839%*	*118%*	*157%*	*138%*
Stadtwerke Kufstein	3,848	4,934	2,179	1,261	2,008	1,637	4,020	733
	162%	*127%*	*287%*	*496%*	*311%*	*841%*	*307%*	*1490%*
Stw Heizwerk Süd Klagenfurt	193	521	431	2,885	1,696	102	664	502
	373%	*138%*	*167%*	*25%*	*42%*	*237%*	*16%*	*38%*
FHKW Klagenfurt Stadtwerke Klagenfurt	140,749	129,275	138,716	114,492	92,952	87,581	71,758	74,576
	107%	*117%*	*109%*	*132%*	*163%*	*91%*	*93%*	*74%*
Stadtwärme Lienz	512	735	1,490	653	394	483	135	251
	394%	*274%*	*135%*	*309%*	*512%*	*2768%*	*8863%*	*4223%*
Solvay Ebensee	24,202	15,195	18,895	16,777	14,920	16,056	17,280	17,085
	267%	*425%*	*341%*	*385%*	*432%*	*158%*	*144%*	*143%*
Sandoz Werk Kundl	69,874	68,225	68,507	64,062	64,034	66,565	61,584	62,361
	107%	*110%*	*109%*	*117%*	*117%*	*107%*	*114%*	*110%*
Verbund FHKW Werndorf 2 Wildon	233,110	155,233	152,139	96,724	6,794	36,792	16,630	2,605
	107%	*161%*	*164%*	*259%*	*3684%*	*4%*	*3%*	*0%*
Verbund FHKW Mellach	1,221,750	1,038,959	1,115,073	1,143,992	1,099,747	903,244	852,887	869,484
	60%	*71%*	*66%*	*64%*	*67%*	*15%*	*14%*	*12%*
Verbund KW Korneuburg	0	0	0	0	0	0	0	0
Verbund KW Dürnrohr Zwentendorf	1,435,406	899,251	1,592,747	1,611,109	1,195,366	1,209,415	799,590	565,110
	79%	*127%*	*72%*	*71%*	*95%*	*0%*	*0%*	*0%*

Table 8-1 Installations of Austria (continued)

Verified Emissions [t CO2] and Share of Free Allowances [%]

Installation	2008	2009	2010	2011	2012	2013	2014	2015
20 Combustion of fuels								
Kelag Wärme Prolactal Hartberg	4,155	6,142	954	1,709	1,534	555	985	889
	56%	*38%*	*242%*	*135%*	*151%*	*322%*	*40%*	*79%*
Voestalpine Kraftwerk Linz	2,859,839	2,304,427	3,213,138	3,226,147	3,182,281	0	0	0
	62%	*77%*	*55%*	*55%*	*56%*			
Energiepark Donawitz	712,134	808,481	1,056,837	1,164,438	1,036,702	0	0	0
	88%	*78%*	*59%*	*54%*	*60%*			
Wienstrom KW Leopoldau Wien	256,284	118,982	206,265	109,080	95,890	77,428	3,881	4,097
	119%	*256%*	*148%*	*279%*	*318%*	*75%*	*1335%*	*0%*
Wienstrom KW Donaustadt Wien	795,491	655,173	717,475	570,442	515,962	362,332	379,018	439,413
	117%	*142%*	*130%*	*164%*	*181%*	*47%*	*40%*	*31%*
Wienstrom KW Simmering Wien	915,476	572,021	423,930	466,479	283,798	370,906	280,010	440,205
	76%	*121%*	*164%*	*149%*	*244%*	*32%*	*76%*	*43%*
EVN FHKW Mödling	5,844	5,882	5,867	5,787	6,724	6,690	5,530	5,679
	348%	*345%*	*346%*	*351%*	*302%*	*299%*	*324%*	*279%*
EVN COGEN Agrana Tulln	30,204	29,454	30,087	29,685	31,102	29,759	31,851	25,436
	91%	*94%*	*92%*	*93%*	*89%*	*0%*	*0%*	*0%*
EVN FHW Palmers Wr. Neudorf	5,276	7,139	9,670	9,642	9,827	10,924	9,238	11,430
	135%	*100%*	*74%*	*74%*	*72%*	*62%*	*66%*	*47%*
EVN FHW Baden	3,841	2,610	3,014	2,451	3,965	2,441	1,663	1,924
	431%	*635%*	*550%*	*676%*	*418%*	*139%*	*183%*	*70%*
EVN FHKW Wr. Neustadt	8,000	8,748	8,127	6,741	5,787	6,576	3,928	4,977
	74%	*68%*	*73%*	*88%*	*103%*	*95%*	*143%*	*50%*
Kelag Wärme St. Magdalen	20,593	17,293	19,159	18,529	9,919	14,716	10,637	10,433
	115%	*137%*	*123%*	*128%*	*238%*	*105%*	*127%*	*115%*
Jungbunzlauer Wulzeshofen	170,861	154,730	172,289	173,376	187,109	200,104	211,425	227,260
	110%	*122%*	*109%*	*109%*	*102%*	*82%*	*76%*	*70%*
EVN BHKW Krankenhaus Mistelbach	424	599	639	321	247	457	245	254
	756%	*535%*	*502%*	*999%*	*1298%*	*52%*	*173%*	*74%*
EVN KW Kornneuburg	142,305	87,091	93,345	14,559	9,991	4,503	5,870	39,436
	72%	*117%*	*110%*	*702%*	*1024%*	*38%*	*26%*	*3%*
EVN KW Dürnrohr Zwentendorf	968,317	751,680	888,005	1,277,502	984,354	1,014,168	437,437	654,490
	93%	*120%*	*101%*	*71%*	*92%*	*7%*	*15%*	*9%*
EVN KW Theiß Gedersdorf	351,018	393,438	346,205	62,103	59,924	32,664	41,415	179,697
	128%	*114%*	*130%*	*724%*	*750%*	*65%*	*46%*	*9%*
Kelag Wärme Linz Bindermichl	94	232	383	133	118	75	159	25
	134%	*54%*	*33%*	*95%*	*107%*	*157%*	*33%*	*744%*
BMW Motoren Steyr	15,146	17,089	18,276	17,338	15,968	12,484	12,641	10,841
	116%	*125%*	*117%*	*124%*	*134%*	*74%*	*66%*	*103%*
Fritz Egger Wörgl	16,414	14,215	16,112	16,077	16,488	15,597	15,380	13,829
	122%	*141%*	*124%*	*125%*	*121%*	*120%*	*120%*	*86%*
Rauch Nüziders	11,846	9,698	9,902	11,235	11,214	11,299	12,388	13,932
	102%	*124%*	*121%*	*107%*	*107%*	*66%*	*54%*	*43%*
FHKW WelsStrom Wels	80,067	66,998	63,594	38,919	33,922	36,724	23,565	20,970
	93%	*112%*	*117%*	*192%*	*220%*	*41%*	*58%*	*57%*
Magna Steyr Werk 1 Graz	9,574	8,984	14,256	15,203	14,040	15,111	13,360	11,456
	144%	*154%*	*97%*	*91%*	*98%*	*150%*	*152%*	*239%*
Magna Steyr Werk 2 Graz	7,441	284	410	345	217	295	268	250
	163%	*4259%*	*2950%*	*3506%*	*5574%*	*1481%*	*1459%*	*2108%*
Funder Neudörfl	6,335	3,160	4,439	3,864	2,270	4,398	5,144	7,516
	328%	*658%*	*468%*	*538%*	*916%*	*487%*	*414%*	*183%*
Funder Werk 1 St. Veit/Glan	31,743	32,407	31,762	26,241	34,028	22,441	18,168	24,713
	136%	*133%*	*135%*	*164%*	*126%*	*175%*	*209%*	*106%*
Voestalpine Stahl Linz sonstige Anlagen	622,373	438,564	482,908	590,179	569,073	0	0	0
	47%	*66%*	*60%*	*49%*	*51%*			
Voestalpine Donawitz sonstige Anlagen	22,669	18,699	22,863	23,207	22,402	0	0	0
	100%	*121%*	*99%*	*98%*	*101%*			
Bioethanolanlage Pischelsdorf	24,795	68,205	57,017	54,458	50,105	59,224	56,288	51,668
	263%	*96%*	*114%*	*120%*	*130%*	*11%*	*33%*	*35%*
FHW Innrain Innsbruck	15,746	16,172	16,943	15,362	15,738	15,396	12,997	14,257
	97%	*95%*	*91%*	*100%*	*97%*	*82%*	*86%*	*70%*

Table 8-1 Installations of Austria (continued)

	Verified Emissions [t CO2] and Share of Free Allowances [%]							
Installation	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
20 Combustion of fuels								
MDF (Binder) Hallein	2,745	2,610	2,462	2,883	2,192	490	103	0
	165%	*173%*	*184%*	*157%*	*206%*	*12871%*	*60060%*	
Fritz Egger St. Johann Tirol	24,160	20,791	10,658	6,571	8,615	7,551	8,226	7,309
	106%	*136%*	*232%*	*377%*	*287%*	*777%*	*693%*	*525%*
Verbund GDK Mellach (Neuanlage § 11/7)	0	0	0	196,806	389,842	149,202	40,293	277,344
				300%	*343%*	*0%*	*0%*	*0%*
Ölmühle Bunge Bruck a.d. Leitha	0	14,732	24,476	24,944	22,463	22,458	22,156	22,254
		106%	*97%*	*95%*	*105%*	*109%*	*108%*	*106%*
KW Timelkam IV	103,553	340,026	580,029	560,205	188,992	28,882	2,847	174,692
	211%	*200%*	*117%*	*122%*	*360%*	*43%*	*97%*	*0%*
Wienstrom Simmering Block 1+2	144,891	1,232,697	1,532,328	1,289,003	921,582	682,695	675,066	840,781
	87%	*113%*	*94%*	*112%*	*162%*	*40%*	*36%*	*26%*
EVN Biomassefernheizwerk Mittleres Schwarzatal	0	0	0	0	403	651	411	367
					121%	*1026%*	*1454%*	*1443%*
Biomasseheizkraftwerk Hall in Tirol	500	511	899	1,075	1,327	604	350	805
	0%	*0%*	*0%*	*0%*	*0%*	*1654%*	*2554%*	*984%*
Semperit Technische Produkte Wimpassing	17,035	16,370	15,043	14,406	14,437	15,391	14,586	14,466
	105%	*109%*	*119%*	*124%*	*124%*	*74%*	*70%*	*95%*

Table 8-1 Installations of Austria (continued)

Installation	2008	2009	2010	2011	2012	2013	2014	2015
	Verified Emissions [t CO2] and Share of Free Allowances [%]							
21 Refining of mineral oil								
Raffinerie Schwechat	2,565,047	2,567,934	2,490,464	2,530,318	2,592,526	2,826,640	2,713,186	2,804,050
	97%	*97%*	*100%*	*98%*	*96%*	*64%*	*65%*	*61%*
22 Production of coke								
Voestalpine Kokerei Linz	914,453	626,564	916,742	905,960	961,580	0	0	0
	108%	*157%*	*108%*	*109%*	*103%*			
24 Production of pig iron or steel								
Sinteranl., Hochöfen, Stahlwerk Donawitz	2,279,216	1,433,638	1,469,754	1,681,929	1,517,232	2,918,014	2,808,536	2,981,508
	79%	*126%*	*123%*	*107%*	*119%*	*66%*	*67%*	*62%*
Voestalpine Stahl Linz	3,743,481	2,953,589	3,465,646	3,192,620	3,178,129	8,648,719	8,698,426	8,712,811
	117%	*148%*	*126%*	*137%*	*138%*	*79%*	*77%*	*76%*
Voestalpine Donawitz Kohleeinblasung	14,793	7,911	9,653	9,796	7,389	0	0	0
	526%	*984%*	*806%*	*794%*	*1053%*			
Voestalpine L6 Erweiterung	556,899	556,899	556,899	556,899	556,899	0	0	0
	100%	*100%*	*100%*	*100%*	*100%*			
25 Production or processing of ferrous metals								
Boehler Schmiedetechnik	0	0	0	0	0	14,647	15,074	15,523
						56%	*49%*	*42%*
Boehler Bleche GmbH & Co KG	0	0	0	0	0	12,673	12,768	12,307
						84%	*82%*	*83%*
voestalpine Tubulars GmbH & Co KG	0	0	0	0	0	71,958	73,748	56,703
						93%	*90%*	*114%*
voestalpine Wire Rod Austria GmbH	0	0	0	0	0	48,771	48,347	49,176
						97%	*96%*	*92%*
voestalpine Schienen GmbH	0	0	0	0	0	49,942	51,351	53,796
						88%	*84%*	*79%*
27 Production of secondary aluminium								
AMAG casting GmbH	0	0	0	0	0	49,557	51,868	59,938
						78%	*9%*	*23%*
28 Production or processing of non-ferrous metals								
Montanwerke Brixlegg AG	0	0	0	0	0	40,778	39,689	39,684
						82%	*82%*	*81%*
AMAG rolling GmbH	0	0	0	0	0	12,580	14,041	16,113
						114%	*100%*	*12%*

Table 8-1 Installations of Austria (continued)

Verified Emissions [t CO2] and Share of Free Allowances [%]

Installation	2008	2009	2010	2011	2012	2013	2014	2015
29-Production of cement clinker								2,533,018
Zementwerke Leube Gartenau	393,964	355,311	270,308	257,660	267,319	265,510	245,218	245,699
	69%	*77%*	*101%*	*106%*	*102%*	*120%*	*128%*	*126%*
Lafarge Perlmooser Retznei	337,266	261,992	241,277	276,666	290,770	278,083	269,972	308,842
	87%	*112%*	*121%*	*106%*	*101%*	*106%*	*107%*	*92%*
Zementwerk Hofmann Kirchdorf	240,098	235,552	196,287	192,381	222,153	191,794	203,595	206,097
	96%	*98%*	*158%*	*148%*	*128%*	*153%*	*142%*	*138%*
Gmundner Zement Gmunden	385,307	356,692	310,139	327,781	344,237	281,768	331,127	328,182
	87%	*93%*	*127%*	*108%*	*103%*	*126%*	*105%*	*105%*
Lafarge Perlmooser Mannersdorf	720,857	613,361	601,677	535,516	566,554	598,660	594,014	617,406
	74%	*87%*	*89%*	*100%*	*105%*	*97%*	*96%*	*91%*
Wopfinger Zement Waldegg	264,657	206,648	204,382	201,195	191,315	262,867	260,135	268,048
	88%	*113%*	*114%*	*116%*	*122%*	*14%*	*14%*	*13%*
Wietersdorfer & Peggauer Zement Peggau	198,935	50,950	18,269	18,337	0	0	0	0
	90%	*351%*	*980%*	*976%*				
Wietersdorfer & Peggauer Zement Wietersdorf	497,811	342,329	309,210	356,207	308,463	405,319	397,425	374,950
	70%	*102%*	*113%*	*98%*	*114%*	*128%*	*129%*	*134%*
Schretter & Cie (Zement) Vils	181,920	168,590	152,852	164,198	168,349	171,502	160,376	183,794
	119%	*128%*	*141%*	*131%*	*128%*	*111%*	*116%*	*100%*
30-Production of lime, or calcination of dolomite/magne								
Baumit Baustoffe Bad Ischl	57,009	44,299	45,808	47,922	49,810	50,105	50,308	41,989
	76%	*97%*	*94%*	*90%*	*87%*	*84%*	*82%*	*97%*
Ernstbrunner Kalktechnik Ernstbrunn	43,916	35,937	30,419	32,757	28,348	28,113	26,343	29,823
	77%	*94%*	*111%*	*103%*	*119%*	*137%*	*144%*	*125%*
Veitsch-Radex Hochfilzen	172,135	127,459	160,030	169,359	139,562	149,398	158,757	148,364
	88%	*119%*	*94%*	*89%*	*108%*	*90%*	*83%*	*87%*
Veitsch-Radex Breitenau	264,056	186,944	251,049	284,762	258,691	247,483	246,694	211,388
	86%	*121%*	*90%*	*79%*	*87%*	*95%*	*93%*	*107%*
Wopfinger Baustoffindustrie Waldegg	127,437	81,786	92,829	112,283	122,691	88,827	104,663	96,957
	108%	*168%*	*148%*	*123%*	*112%*	*140%*	*117%*	*124%*
Wietersdorfer & Peggauer (Kalk) Peggau	63,380	10,519	17,428	46,586	32,008	93,173	89,812	97,255
	105%	*630%*	*380%*	*142%*	*207%*	*130%*	*132%*	*120%*
VOEST-Alpine Stahl Linz (Kalk) Steyrling	332,779	259,441	339,768	335,950	303,335	370,764	369,605	366,489
	98%	*126%*	*96%*	*97%*	*107%*	*17%*	*18%*	*17%*
Kalkwerk Tagger (Leube) Golling	135,519	131,537	127,624	125,030	127,155	104,856	60,564	64,894
	100%	*103%*	*106%*	*108%*	*107%*	*1%*	*2%*	*2%*
Styromagnesit Steirische Magnesitindustrie GmbH	0	0	0	0	0	36,761	34,416	33,222
						24%	*25%*	*26%*
Schretter & Cie (Kalk) Vils	41,124	36,047	30,110	34,768	35,771	36,645	36,166	30,786
	96%	*110%*	*132%*	*114%*	*111%*	*104%*	*104%*	*119%*

Table 8-1 Installations of Austria (continued)

Installation	Verified Emissions [t CO2] and Share of Free Allowances [%]							
	2008	2009	2010	2011	2012	2013	2014	2015
31-Manufacture of glass								
Vetropack Kremsmünster	73,379	72,657	67,740	59,776	65,830	67,305	64,209	64,647
	87%	*87%*	*94%*	*106%*	*96%*	*98%*	*101%*	*99%*
Vetropack Pöchlarn	56,782	54,512	57,062	57,397	52,792	56,565	56,240	57,278
	87%	*90%*	*86%*	*86%*	*93%*	*90%*	*89%*	*85%*
Technoglas Voitsberg	6,188	5,316	7,090	7,975	7,284	7,180	6,975	6,511
	105%	*122%*	*92%*	*81%*	*89%*	*102%*	*103%*	*109%*
Swarovski Wattens	19,611	13,798	17,475	17,123	15,405	21,318	13,951	10,937
	169%	*240%*	*189%*	*193%*	*215%*	*114%*	*171%*	*149%*
Saint-Gobain Isover Austria	8,866	8,042	6,869	6,823	6,633	5,830	6,576	5,950
	112%	*123%*	*144%*	*145%*	*149%*	*115%*	*100%*	*109%*
Stölzle-Oberglas Köflach	49,066	42,925	48,043	47,471	47,486	46,053	46,454	47,901
	82%	*94%*	*84%*	*85%*	*85%*	*93%*	*91%*	*87%*
32-Manufacture of ceramics								
Ziegelwerk Pichler Wels	18,851	16,063	16,645	17,813	17,098	15,096	17,029	16,496
	122%	*144%*	*139%*	*130%*	*135%*	*136%*	*118%*	*120%*
Herbert Pexider GmbH Teufenbach	12,299	8,583	9,493	8,552	7,441	6,821	0	0
	95%	*136%*	*123%*	*137%*	*157%*	*135%*		
Lias Fehring	5,643	3,353	3,453	3,772	2,361	2,148	4,231	3,116
	175%	*294%*	*286%*	*261%*	*418%*	*466%*	*232%*	*310%*
Tondach Unterpremstätten	8,772	6,051	6,699	5,787	3,436	0	0	0
	95%	*138%*	*125%*	*144%*	*243%*			
Rath GmbH Krummnußbaum	8,073	7,507	8,484	9,554	9,193	8,227	8,282	6,900
	113%	*121%*	*107%*	*95%*	*99%*	*112%*	*109%*	*129%*
Ziegelwerk Rhomberg-Dornbirn	1,948	3,161	3,278	4,103	4,690	3,760	3,961	4,024
	272%	*167%*	*161%*	*129%*	*113%*	*80%*	*74%*	*72%*
34-Production or processing of gypsum or plasterboard								
Knauf Werk Weißenbach	0	0	0	0	0	28,305	28,244	28,186
						2%	*3%*	*3%*
Saint-Gobian Rigips Austria GmbH, Werk Bad Aussee	0	0	0	0	0	21,469	21,243	20,566
						107%	*133%*	*135%*

Table 8-1 Installations of Austria (continued)

Installation	Verified Emissions [t CO2] and Share of Free Allowances [%]							
	2008	2009	2010	2011	2012	2013	2014	2015
35-Production of pulp								
M-real Hallein	69,760	31,405	7,692	5,238	6,041	1,637	1,227	1,274
	155%	*343%*	*1401%*	*2058%*	*1784%*	*904%*	*1094%*	*949%*
Norske Skog Bruck GmbH	220,644	198,720	205,075	215,193	197,065	171,672	181,184	179,917
	95%	*106%*	*102%*	*98%*	*107%*	*71%*	*66%*	*65%*
Lenzing AG Faser+Energie 1, Zellstoff, Papier	137,466	149,948	154,426	128,527	124,684	151,139	209,191	197,638
	130%	*119%*	*116%*	*139%*	*144%*	*248%*	*176%*	*183%*
Neusiedler Zellstoff Kematen	9,378	8,933	8,857	8,235	8,341	7,349	8,148	7,456
	110%	*115%*	*116%*	*125%*	*123%*	*0%*	*0%*	*0%*
Merckens Schwertberg	4,398	3,703	3,974	3,806	3,794	3,825	3,527	3,782
	97%	*115%*	*107%*	*112%*	*112%*	*125%*	*133%*	*122%*
Zellstoff Pöls	14,668	9,615	7,450	11,718	14,269	45,847	37,071	48,407
	324%	*494%*	*638%*	*406%*	*333%*	*65%*	*55%*	*42%*
36-Production of paper or cardboard								
Lenzing Papier GmbH	0	0	0	0	0	1,566	1,934	1,821
						1834%	*1460%*	*1522%*
Sappi Gratkorn	320,065	314,213	317,873	295,387	296,691	345,961	322,366	402,966
	120%	*122%*	*121%*	*130%*	*129%*	*82%*	*87%*	*68%*
Nettingsdorfer Ansfelden	74,893	69,853	75,790	69,018	63,190	67,686	67,692	66,093
	123%	*132%*	*121%*	*133%*	*146%*	*170%*	*167%*	*168%*
Papierfabrik Wattens	27,234	25,044	26,712	27,347	24,288	24,393	23,794	24,445
	82%	*89%*	*85%*	*89%*	*96%*	*112%*	*112%*	*108%*
Mayr Melnhof Karton Frohnleiten	119,250	110,232	119,180	114,237	117,030	128,111	123,161	129,085
	109%	*117%*	*109%*	*113%*	*111%*	*109%*	*111%*	*104%*
Mayr Melnhof Karton Hirschwang	25,447	25,075	28,147	26,789	27,080	26,047	25,601	26,656
	111%	*113%*	*101%*	*106%*	*105%*	*91%*	*91%*	*86%*
Feinpapier Feurstein Traun	35,780	31,837	36,376	33,556	33,252	32,695	31,830	32,853
	97%	*109%*	*96%*	*104%*	*105%*	*82%*	*82%*	*78%*
SCA Laakirchen	2,428	1,924	1,905	2,067	2,217	2,171	2,181	2,248
	107%	*134%*	*253%*	*234%*	*218%*	*7226%*	*7068%*	*6735%*
Rondo Ganahl Frastanz	26,408	25,538	25,347	24,097	22,248	22,841	23,139	24,177
	89%	*92%*	*93%*	*97%*	*105%*	*119%*	*115%*	*108%*
Mondi Packaging Frohnleiten	45,753	46,480	46,585	45,223	34,043	7,995	0	0
	95%	*94%*	*94%*	*96%*	*128%*	*543%*		
Papierfabrik Hamburger Pitten	172,316	177,170	179,906	184,579	167,476	172,523	169,934	173,434
	83%	*81%*	*80%*	*78%*	*86%*	*64%*	*64%*	*61%*
Neusiedler Kematen	34,366	32,053	33,266	31,086	30,936	27,697	29,228	28,033
	113%	*122%*	*117%*	*125%*	*126%*	*112%*	*104%*	*107%*
Steyrermühl AG Steyrermühl	234,457	197,632	232,532	248,048	248,914	157,247	79,249	72,952
	101%	*119%*	*101%*	*95%*	*95%*	*95%*	*185%*	*195%*
Frantschach St. Gertraud	32,331	33,767	35,701	36,133	36,874	45,995	34,271	44,700
	155%	*149%*	*141%*	*139%*	*136%*	*281%*	*369%*	*277%*
Profümed GmbH	4,728	4,453	4,980	4,993	4,819	5,407	4,868	4,639
	93%	*99%*	*88%*	*88%*	*91%*	*64%*	*70%*	*72%*
Brigl & Bergmeister Niklasdorf	3,246	3,262	3,570	3,475	3,658	3,560	3,874	3,548
	91%	*91%*	*83%*	*85%*	*81%*	*0%*	*0%*	*0%*
SCA Ortmann	76,174	74,859	75,762	74,029	72,638	72,736	71,829	70,734
	92%	*94%*	*98%*	*98%*	*100%*	*62%*	*62%*	*62%*
Neusiedler Hausmening	107,189	106,188	103,573	100,542	103,244	96,399	94,585	97,324
	97%	*98%*	*100%*	*103%*	*100%*	*90%*	*90%*	*86%*

Table 8-1 Installations of Austria (continued)

Installation	Verified Emissions [t CO2] and Share of Free Allowances [%]							
	2008	2009	2010	2011	2012	2013	2014	2015
38 Production of nitric acid								
Borealis Agrolinz Melamine Salpetersäureanlage	0	0	63,988	48,326	53,173	48,508	48,024	46,856
			392%	*520%*	*409%*	*328%*	*326%*	*328%*
41-Production of ammonia								
Borealis Agrolinz Melamine Ammoniakanlage	0	0	0	0	0	790,678	924,599	896,718
						88%	*74%*	*75%*
42-Production of bulk chemicals								
Atmosa PSA	0	0	0	0	0	28,982	27,207	29,794
						84%	*88%*	*79%*
ESIM Chemicals GmbH	0	0	0	0	0	0	0	0
Borealis Schwechat	30,701	30,803	44,749	43,298	40,451	20,717	14,510	12,968
	48%	*48%*	*33%*	*34%*	*37%*	*367%*	*515%*	*566%*
Dynea Krems	1,203	855	404	264	320	16,663	17,923	18,161
	117%	*165%*	*349%*	*533%*	*440%*	*117%*	*107%*	*103%*
99-Other activity opted-in pursuant to Article 24 of Directive 2003/87/EC								
Schönkirchen-Reyersdorf	0	0	0	0	0	28,422	30,192	36,792
						97%	*90%*	*72%*
Thann	0	0	0	0	0	3,104	1,902	4,015
						83%	*133%*	*62%*
Auersthal	0	0	0	0	0	83,130	76,802	72,769
						85%	*90%*	*93%*
Jungbunzlauer Rohstoffanlage Pernhofen	1,906	18,985	25,978	27,048	25,267	0	0	0
	100%	*136%*	*106%*	*101%*	*109%*			