

Preparations of Companies to EU ETS Rules from 2013 Onwards Show Significant Deficiencies

The Centre for European Economic Research (ZEW) conducts a yearly survey among all German companies that fall under the regulations of the EU emissions trading. The survey results are presented in the KfW/ZEW CO₂ Barometer which is targeted at companies, politicians and the general public. 145 companies who run 392 regulated installations and emitted 192 million tonnes of CO₂ in 2010 have participated in the current survey. Hence, the survey represents 24 % of all installations in Germany, or 42 % of all emissions within the German part of the Emissions Trading System.

Since 2005, greenhouse gas emissions by energy suppliers and energy-intensive industrial installations are regulated by the European Emission Trading System (EU ETS). For each tonne of CO₂, companies that fall under this regulation must surrender an emission certificate to the regulating authorities. In this way, it can be guaranteed that the emissions are kept below the emissions cap, since the number of certificates issued is limited. The European Emission Trading System represents a key instrument of the Euro-

pean climate policy. Its aim is to reduce the greenhouse gas emissions in Europe by 21 % until 2020 compared with the average emissions from 2008 to 2012.

Changes to the European Emission Trading System from 2013

From 2013 onwards, numerous changes to the European Emission Trading System will be introduced. These plans are already influencing the way of thinking in the German companies that fall under the regulations. The European air traffic will be included in the European emission trading scheme as early as 2012. From 2013, further stationary industrial installations, for example from the chemical industry and the non-ferrous metal industry, shall follow. Apart from the greenhouse gas CO₂, certain sources of N₂O emissions will be regulated from 2013 as well. Beginning with 2013, the EU-wide greenhouse gas emissions cap shall amount to 2,039 MtCO₂e (compared to 2,299 MtCO₂e between 2005 and 2007). This figure includes 107 MtCO₂e of estimated emissions by stationary industrial

installations that will fall under the scheme. In addition, the EU-wide emissions cap will be reduced by 1.74 % each year beginning with 2013, which means a reduction of approximately 37.4 MtCO₂e per year. The most important change will be made with regard to the free allocation of emission allowances to regulated installations from 2013 onwards. EU regulations included provisions for a free allocation of at least 95 % of all emission allowances between 2005 and 2007, and a free allocation of at least 90 % between 2008 and 2012. However, from 2013 on, the free allocation will be drastically reduced. For the calculation of the new allocation, the so-called product benchmarks were developed. These product benchmarks provide guideline values for CO₂ emissions for a given product. Thus, less efficient manufacturing installations will receive less free permits than the more efficient ones. Furthermore, energy suppliers shall generally receive no more free permits. Until now, the exact amount of allowances for free allocation to come has been unknown. In September 2011, the responsible national authorities shall

Figure 1: Verified Emissions und Emission Allowances in the ETS in Germany

	2005	2006	2007	2008	2009	2010
Verified emissions (millions of tCO ₂)	475.0	478.1	487.2	472.5	428.0	453.9
Percentage changes compared to the previous year	–	+0.6	+1.9	-3.0	-9.4	+6.1
Emissions (Cap) ¹ (millions of tCO ₂)	499.0	499.0	499.0	451.9	451.9	451.9

Source: CITL (2011), DEHSt (2011)

¹ The actual numbers of available emission allowances differ from the figures given here, since a reserve for new emitters is kept aside.

present their proposals for the free allocation to installations to the EU Commission. The Commission will then check whether the proposals comply with EU directives; it may demand a review of the proposals by the national authorities. Therefore the final allocation volume for companies will probably not be fixed until 2012. In special cases, there even may be delays until 2013, i.e. after the new trading period begins. This has already been the case with certain member states when the National Allocation Plans for the first trading period were developed. Some of the regulated companies are particularly struggling with the uncertainty of planning that stems from the lengthy drafting process of the actual reforms.

Companies need certainty for planning

Indeed, as many as 72 % of the surveyed companies in Germany have tried to estimate the volume of the new allocation from 2013 by March 2011. Approximately 63 % of all surveyed companies expect an insufficient allocation of certificates from 2013. To be compared, just 27 % of all respondents suffered from insufficient allocation in 2010. As a consequence, many companies will have to expect substantial additional expenditures from 2013 due to emissions trading. While the additional expenditures for smaller emitters will be limited, bigger emitters will face additional expenditures of several hundreds of thousands of euros. Very large emitters even have to expect additional costs amounting to millions of euros, especially in the energy sector where the most reductions to the free allocation will be made.

Indeed, for a transformation towards a low greenhouse gas European economy, it is necessary to set clear incentives for CO₂ reductions by means of a price signal. This fact is widely accepted within the German economy. However, given the extensive reforms, the companies must be sufficiently informed and need enough time for an adequate preparation for the changes to come. This is clearly a weak point of the European climate policy. The surveyed companies stated that they would need an average of 20 months between the announcement of the actual free allocation from 2013 and the enactment of the regulations in order to be perfectly prepared for the changes. This seems reasonable, since many companies will have

to plan for substantial additional costs. In reality, the preparation phase for the companies is likely to be way shorter. It depends on the assessment procedure that the EU commission will apply to the propositions for free allocation made by the German Emissions Trading Authority.

CO₂ emissions slightly increased

In 2010, the emission of detrimental CO₂ in Germany has grown by at least 6 % compared to the previous year. The reason for this is the economic recovery after the financial and economic crisis of 2008 and 2009 which has caused a strong reduction in emissions because of lower production in the industrial and energy sector.

For 2010, the German Emissions Trading Authority (DEHSt) has issued 396 million of free emission allowances to companies in Germany. This constitutes about 87 % of the verified emissions in Germany in 2010. In addition, 41.1 million of emission allowances were auctioned, and further allowances kept aside as a reserve. Hence, almost 17 million of certificates from other European countries were imported to Germany in emission trading year 2010. If the certificates are priced with the average price for emission allowances as it was in emission trading year 2010, they amount to a total net import of emission allowances worth approximately EUR 250 million.

Mitigation and trading activities without changes

The CO₂ mitigation and trading activities of the interviewed companies have barely changed in the course of the emission trading year 2010 compared to the

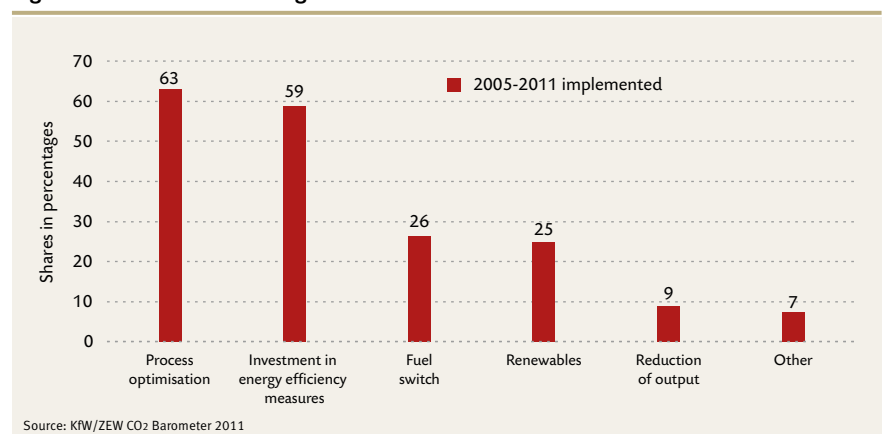
previous year. In total, 54 % of the respondents have traded emission allowances in 2010, 18 % hereof more than once a year and 36 % just once during the trading year 2010 (reaching from April 2010 to March 2011). 53 % of respondents stated that they wanted to trade emission allowances in 2011. Thus the trading activities of the regulated companies will presumably remain on the same level as the year before. Companies expect the EUA price to range between EUR 22.70 and EUR 31.90 in average in the third trading period.

In terms of CO₂ mitigation activities, there were no significant changes in the emission trading activities by German companies in 2010 either. 63 % of the respondents have taken actions towards reducing CO₂ emissions since the introduction of emissions trading in 2005. Process optimisation is still regarded as the most important mitigation action. It involves restructuring and optimising the existing production processes in a way that leads to a CO₂ reduction but does not require larger investments. The second most important type of mitigation actions are direct investments in energy efficiency technology. Switching to other fuels, e.g. from coal to gas in power generation, and the use of renewable energy sources were also named among mitigation actions. However, they still remain secondary.

New regulation send a positive signal for CO₂ abatement

The altered allocation regulations from 2013 represent a notable break in the EU Emissions Trading Scheme. Of course, the change to fewer allocations is a challenge for many companies, but the re-

Figure 2: The Choice of Mitigation Actions Taken Until Now



forms seem to enhance the incentive function of the trading system. For instance, almost two thirds of all respondents already intend to introduce new CO2 mitigation actions beginning with 2013. In the course of these actions, emissions abatement will become more important. In the past, greenhouse gas emissions abatement mostly was a side effect of process optimisations or investments which were made anyway. Only 5 % of all respondents stated that they have taken actions with the primary goal of reducing CO2 emissions in the years 2005 to 2010. This situation changes considerably when the planned abatements from 2013 are concerned. One fourth of all respondents said that from 2013, they would take actions with the primary goal of reducing CO2. In doing so, the most important option for reducing CO2 will be the investment in energy efficiency technologies.

There are two reasons for planning additional CO2 abatement actions from 2013 onwards. Firstly, the companies expect an increase in prices for emission allowances. Increased prices for EU emission allowances are to expect from 2013, because the supply of emission allowances will decrease as a consequence of the lowered EU-wide emissions cap for greenhouse gas emissions. Another reason for the additional abatement initiatives may be seen in the reduction of free allocations. Until now, relatively few companies were insufficiently allocated free certificates. Yet from 2013, the majority of regulated companies will have to purchase additional certificates. Therefore the expectation of additional costs might increase the perception of emissions trading by many companies and intensify their search for cost reduction potentials.

One important factor influencing the abatement of CO2 emissions is the technical life cycle of existing installations in the EU emissions trading. If existing installations are replaced with new ones, this often leads to an abatement of greenhouse gas emissions. This can be explained with the fact that nowadays, companies pay more attention to energy efficiency as a consequence of the rise in energy costs and the introduction of the EU Emissions Trading System. Furthermore, many sectors have seen technical innovations that facilitate energy-efficient production. It seems that most emissions in Germany come from installations with an average technical life cycle of 15 to 20

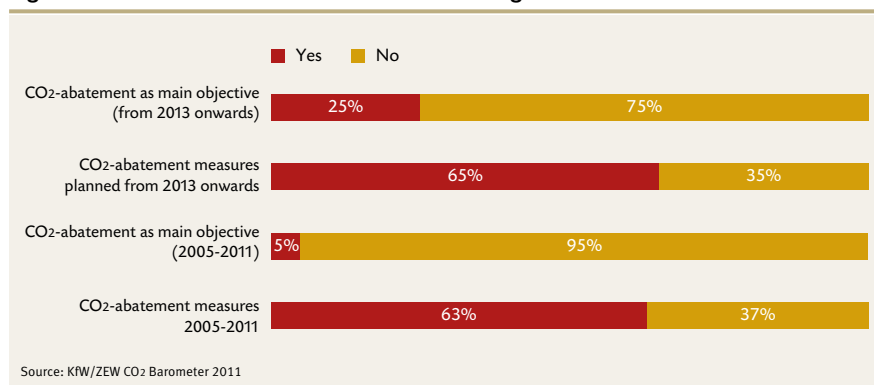
years. Thus, new investments in the German industrial sector can be expected from 2026 onwards. These investments are linked to a high potential for greenhouse gas emissions abatement and an increase in energy efficiency.

Incentive structures in companies capable of improvement

In the course of the survey among companies, their internal incentive structures for detecting CO2 abatement potentials were analysed, too. In most companies (56 %), just one single person was responsible for managing the emissions trading, 11 % of all companies established no clear responsibilities for managing the emissions trading at all. On the other hand, 29 % of the companies have set up a constant team of employees working on the

house gas abatement potentials. Only 14 % of the respondent companies have initiated financial incentives for the detection of abatement potentials through employees, for example by introducing an employee suggestion box. 12 % of the companies rely on voluntary contributions from their employees, for example by applying to their environmental awareness. Managers of regulated installations also do not always have optimally designed incentives for CO2 abatement. Of the companies with more than one regulated installation, 17 % (about 50 % of all respondents) do not think it necessary to include the CO2 price in the process of making production decisions. Moreover, 41 % of the respondents largely base their production decisions on factors other than the price on CO2. Thus the incentives for a consequent use of CO2 abatement poten-

Figure 3: An Overview of Taken and Planned Mitigation Activities



issues involved in emissions trading. Among them are employees with technical and economic background. Such teams are probably most capable of dealing with the Emissions Trading System, because they can assess the technical options for CO2 abatement along with the economic options available for trading emission allowances. Whereas 50 % of respondents have introduced an environmental management system, certified environmental management systems have a significant positive influence on Carbon Management. This result was no surprise, as such systems create clear responsibilities and process sequences for environmentally relevant issues in companies. Nevertheless, a positive relation between certified environmental management systems and the management of emissions trading could be shown for the first time.

Most companies (70 %) do not include their employees in the detection of green-

entials are rather limited in most companies with more than one regulated installation.

Rising prices for emissions allowances in the third trading period can be expected to foster the incentives for a more consequent use of mitigation potentials.

Big burden for small emitters

Transaction costs are costs that come not from emissions trading, but from in-house management of emissions trading. This includes duties such as emission measurement and verification, but also the costs of managing the purchase and sale of certificates and the assessment of CO2 abatement options. Emission measurement and verification is responsible for the largest part of the transaction costs, as not all companies trade emission allowances or search for CO2 abatement options. The transition costs can be subdivided into two almost equal parts:

the costs for external services and the costs for services provided by the company itself.

Especially small emitters (<25,000 tCO₂) have high transaction costs with a median of EUR 0.64 per tonne of CO₂ emitted. Therefore, the median transaction costs of small emitters are eight times as high as those of larger emitters (≥25,000 tCO₂). For larger emitters, me-

dian transaction costs amount to EUR 0.08 per tonne of CO₂.

Transaction costs can substantially influence the behaviour of a company with respect to emissions trading. For example, the small emitters who are especially suffering from high transaction costs are much less active when it comes to emissions trading. They have a lower level of information, tend to assess CO₂

mitigation costs less frequently and also trade and abate less than larger emitters. The reasons for this are the relatively high transaction costs for Carbon Management per tonne CO₂ emitted, but also lower potential savings because of their low emission levels. Therefore many small emitters refrain from Carbon Management on a large scale, apparently as a result of weighing up costs and benefits. In many cases, the costs of additional optimisation actions seem to outweigh the benefit to be expected. As a reaction to this situation, from 2013 on small emitters shall have the chance to “opt out” of the emissions trading into another regulatory form that is just as efficient. There already are concrete proposals for this. However, it cannot be said yet whether these measures will really take the burden off the small emitters.

Figure 4: Incentives for Employees to Discover CO₂ Abatement Potentials

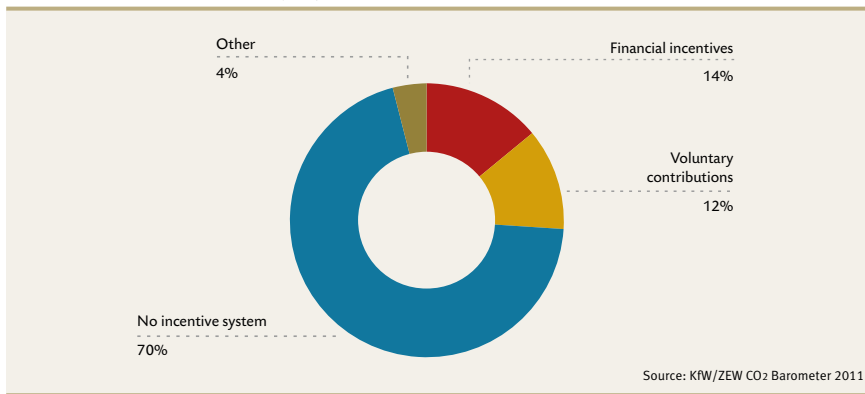
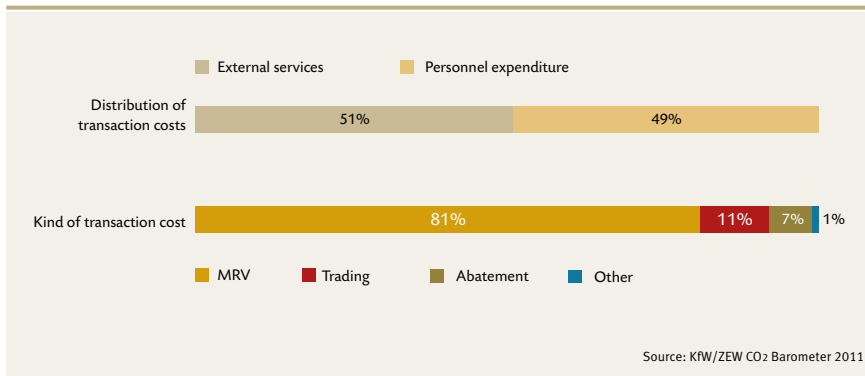


Figure 5: Distribution of Transaction Costs for Different Cost Types



Time to act

In general, all companies regulated by the emissions trading have to adapt to the planned changes from 2013 onwards, and they also need long-term security in planning and investment if the market-based transformation towards a greenhouse gas extensive economic structure is to succeed. Conservation and innovative and productive economy constitute the basis for a sustainable development in Germany. For the functioning of the EU Emissions Trading System, it is crucial to clearly formulate any political changes, to communicate them consequently and also to mitigate against the unequal burdening of companies with transaction costs within the EU Emissions Trading Scheme.



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About the KfW/ZEW CO₂ Barometer

The KfW/ZEW CO₂ Barometer is a cooperative project of the KfW Bankengruppe and the Centre for European Economic Research (ZEW). With the KfW/ZEW CO₂ Barometer, carbon market experts are surveyed biannual on the development of price expectations and on issues which will determine the shape of the future carbon market. The publications of the KfW/ZEW CO₂ Panel are available on: www.zew.eu/co2panel

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