

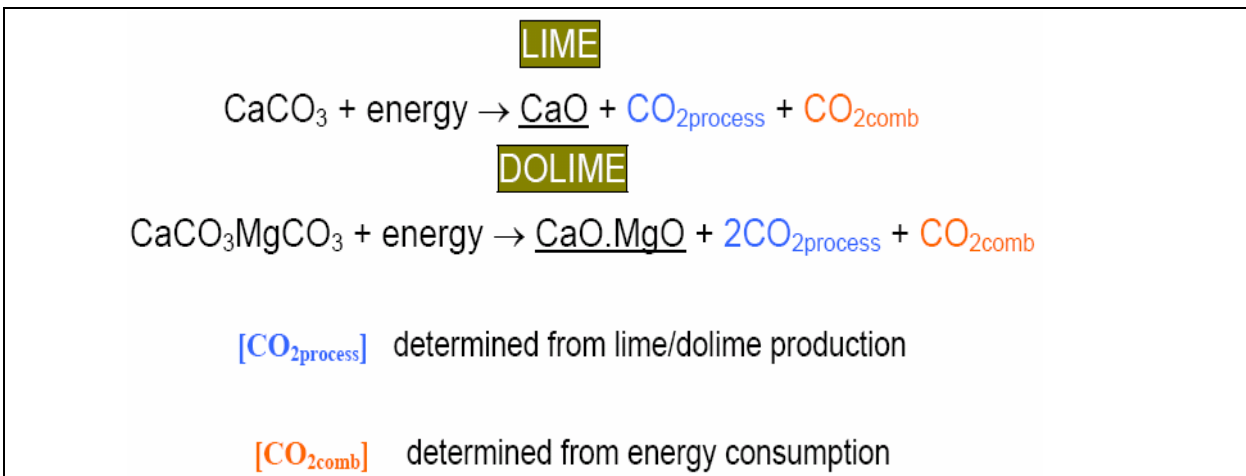
**The EU Green House Gas Emission Trading Scheme:  
Is the discrimination for process CO<sub>2</sub> ignored ?**

By

**Yves de Lespinay  
Secretary General of the European Lime Association (EuLA)**

**Introduction**

The lime industry is according to its turn over the smallest of all industries concerned by the emission trading but the highest CO<sub>2</sub> intensity related to its turn over. Last year, about 30 million t of lime were produced in Europe. The gross income amounted in the year 2005 to ~2.5 billion euro (limestone aggregates and calcium carbonate products included). The number of employees is about 14.000. In the mean time, the lime companies have been differently affected by the emission trading. Limestone and dolomitic limestone are the raw materials to produce respectively lime and dolime. These raw materials which are not combustible can be burnt in six different types of kilns. The target of this process is to remove as much CO<sub>2</sub> as possible from the raw materials leading to the production of lime and dolime and to the emission of CO<sub>2</sub>. (See table 1). For the production of one ton lime, depending of the type of kiln in place, depending on the required specifications of the finished product, depending on the characteristics of the raw material, and finally depending on the geographical location of the lime plant, the total of CO<sub>2</sub> emission varies from 1.0 to 1.7 t of CO<sub>2</sub>. The amount of CO<sub>2</sub> being released is 0.785 t per t lime and 0.915 t per t of dolime. The lime figure has been confirmed by ICCP<sup>1</sup> and it has been confirmed in the monitoring and reporting guidelines established by the European Commission. The balance comes from the combustion of fossil fuels.



**Table 1: lime production and its related CO<sub>2</sub> emissions (EuLA)**

According to the investigations made by EuLA on the first allocation plan, for the period 2005-2008, 2/3 of the CO<sub>2</sub> emissions come from the process and 1/3 from the combustion of fuels (biomass accounting for zero emission). This represents an order of 120 M tons of CO<sub>2</sub> and only 1.7 % of the total of the EU (25) NAPs<sup>2</sup>, respectively 1.2 % for process emission and 0.5 % for combustion emissions. This order is marginal.

<sup>1</sup> Inter Governmental Climate Change Panel

<sup>2</sup> National Allocation Plans

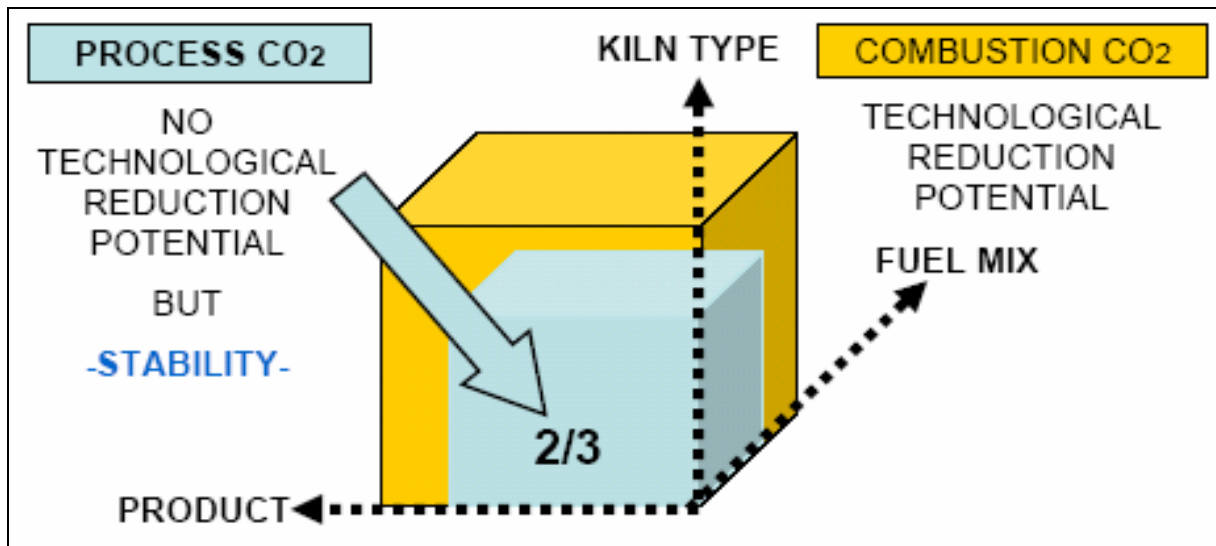


Table 2: Emission variation according to the lime kiln, the product and the fuels mix (EuLA)

All the CO<sub>2</sub> emissions do not have an effect on climate change if we take into account the carbon sinks. To a certain extent this can apply to the lime. Some percentages, indeed, of the process CO<sub>2</sub> emissions are also subject to natural carbon sequestration through re-carbonation over time by admission of CO<sub>2</sub> from the air. According to the research made by the Technische Universität Clausthal in various segments of the typical lime markets such as construction or environmental applications, between 11 to 32 % of the emitted CO<sub>2</sub> will re-carbonate within 5 to 15 years. (See table 3)

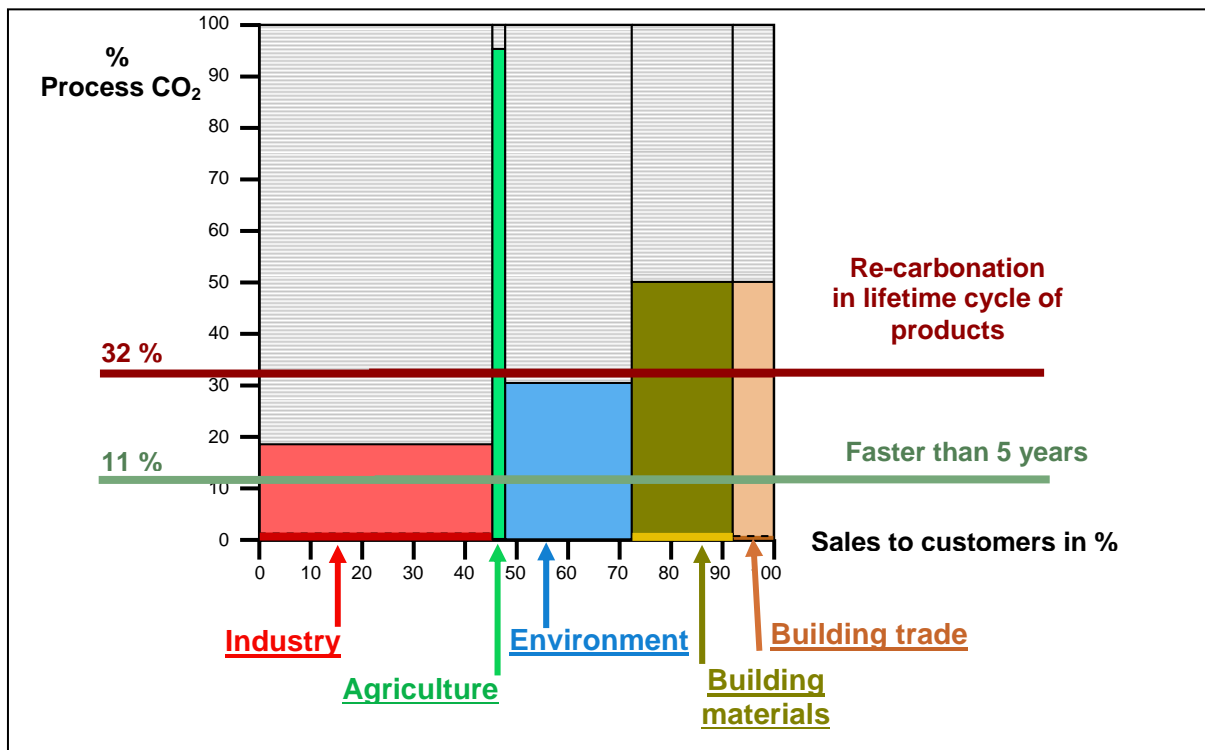
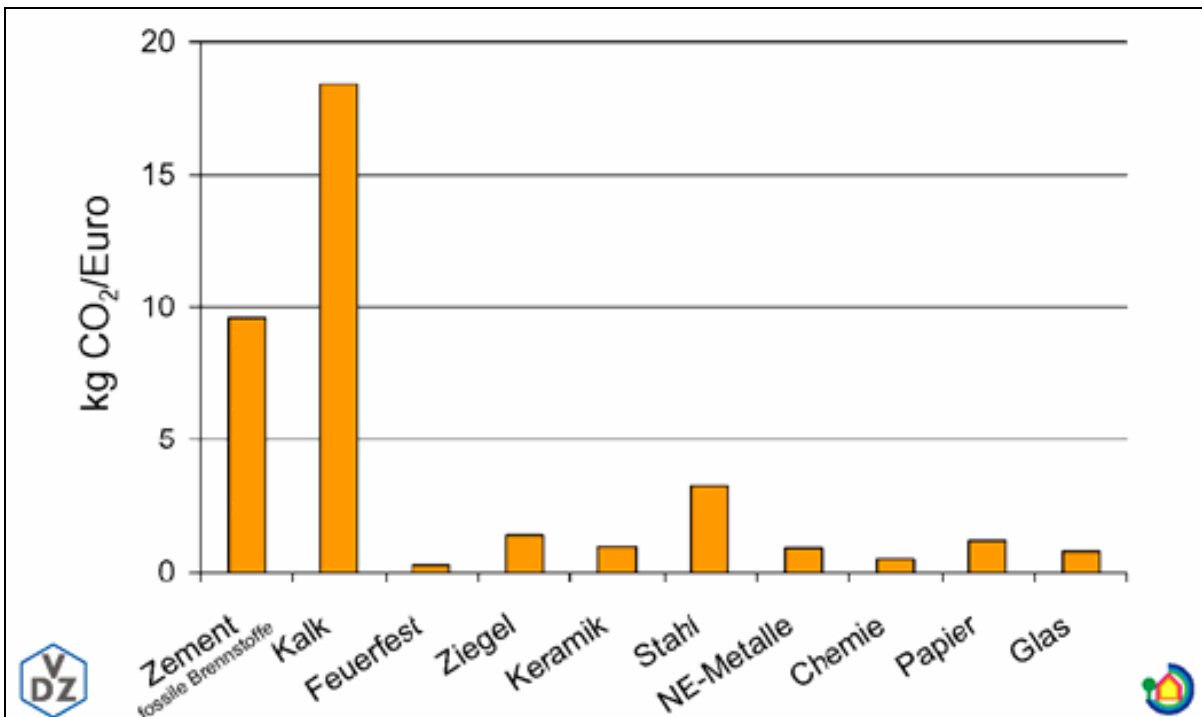


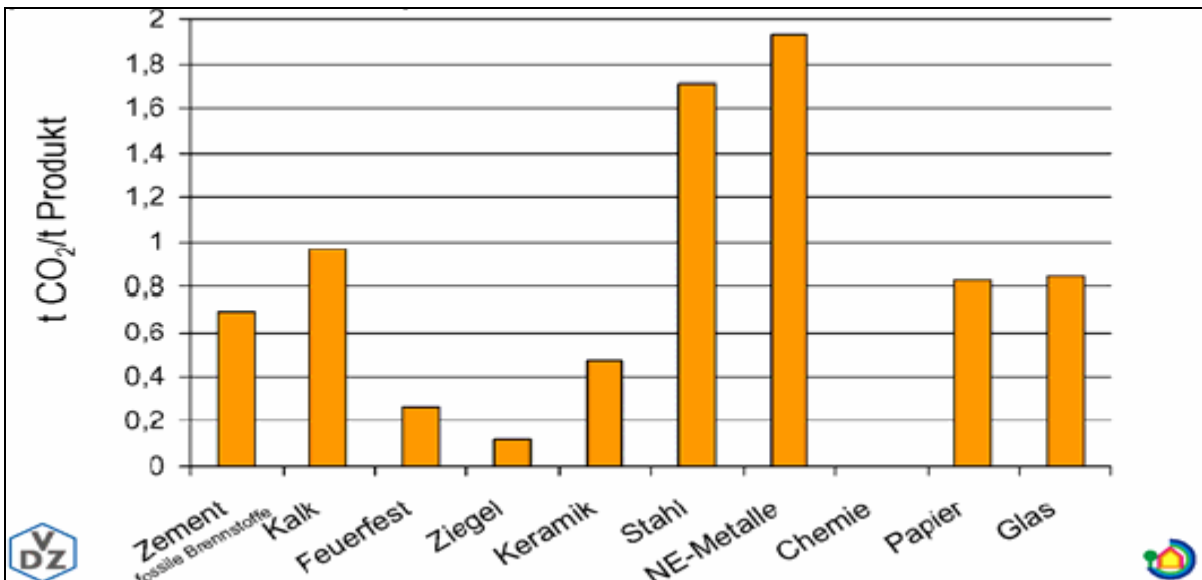
Table 3: Lime re-carbonation depending on the application (BVK)

In Germany, VDZ underlined for several industrial sectors the CO<sub>2</sub> intensity compared to their turn over. (See table 4) It clearly shows that three sectors face more difficulties than others: lime, cement and steel. The lime sector becomes in first position and is pointed out with nearly 20 kg CO<sub>2</sub> / € of turn over.



**Table 4: Intensity of CO<sub>2</sub> compared to turn over 1999 in energy intensive industries (VDZ)**

In addition VDZ compared the amount of CO<sub>2</sub> /t of product and here again the lime comes in a third position after the steel and the non ferrous metal sectors, the aluminum in particular. As a matter of fact the lime CO<sub>2</sub> intensity is even higher than stated. (See table 5).



**Table 5: Comparison of CO<sub>2</sub> intensity in different industrial sectors per t of output (VDZ)**

We assume a production cost between 55 and 75 €/t lime, say 60€ in average. With a price of 25 €/t CO<sub>2</sub> and an emission of 1.2 t CO<sub>2</sub>, the marginal cost of 34 € reaches 50% of the production cost. In France, the Ministry of Ecology underlined in 2001 that, based on 10€/t the allocated amount equals just above 25% of the annual added value for the lime sector compared to less than 1% for the Ceramic Industry. This assumption becomes even worse with a price of 28€/t CO<sub>2</sub>. Among the industrial sectors subject to the emission trading directive, the lime industry faces the most unfavorable position. The allocation of allowances of CO<sub>2</sub> is definitely the critical factor. As in others sectors, in the lime sector

some companies have been short and even very short in CO<sub>2</sub> allocations and they had to buy the missing CO<sub>2</sub> allocations at up to 28 €/t. Like in other sectors, in the lime sector some companies received more allocations and have been able to sell it leading to unexpected profits. The later case will not be recurrent over time and the negotiation of the national allocation plan for the second period 2008-2012 already shows allocation cuts. If the system applies after 2012 and leads to a succession of caps we anticipate all lime companies to buy the missing allowances.

## **1. A legitimate case to put forward**

The European Union wanted to create through the emission trading scheme Directive a system “to decrease the greenhouse gas missions on a cost and economic efficient way” (Article 1). There is nothing to argue about it. Therefore, it was fair to refer to the technical potential in the Annex III, criterion.3 *“Quantities of allowances to be allocated shall be consistent with the potential, including technological potential, of activities covered by the scheme to reduce emissions. Member States may base their distribution of allowances on averages emissions GHG by product in each activity and achievable progress in each activity”*. This technical potential for emission reduction does practically not exist anymore for the lime industry. On one hand, the process CO<sub>2</sub> cannot be reduced, on the other hand, the kilns achieve a thermal efficiency of up to 85%. The kiln systems are, according to the state of the art, not to be improved for the moment. The last possibilities were exhausted and checked in several Climate Protection Negotiated Agreements for instance in Germany, Belgium or France. Under such conditions, the system of the European Emission Trading cannot achieve more emission reductions for the lime industry. Of course, there is a theoretical alternative: Investment into emission-reducing technologies or purchase the missing allowances. For us the alternative is then simple: when looking at the marginal cost, the remaining alternative is the production reduction. Reducing the production, to our knowledge, is neither the objective of the protocol of Kyoto nor the objectives of the Lisbon agenda promoting growth and employment.

For the first national allocations for the period 2005-2008, the so-called “learning by doing period” we experienced a different approach on the way the “technical potential” was addressed among the 25 Member States. Some of them provided a fair treatment to process emissions when most of them totally ignored it. On the 22<sup>nd</sup> of December 2005, the European Commission released a Communication providing “Further guidance on allocation plans for the 2008 to 2012 trading period of the EU Emission Trading Scheme” in which the criterion 29 states: *“In order to reduce the complexity and administrative effort the Commission considers it (is) inappropriate to maintain special provisions at installation level on process emissions”*. This must be seen in relation with the Item 2, criterion 3 of Annex III. This is one of the key mandatory criteria of Annex III of the Emission Trading Directive which takes into account the technological potential to reduce emissions. In addition, the recital 8 of the directive stipulates that the *“Member States should have regard when allocating allowances to the potential for industrial process activities to reduce emissions”*. The European Commission has apparently reversed its interpretation of this criterion.

It is unfair and unacceptable for the lime industry emitting process related emissions. It cannot be reduced. The limestone “de-carbonation” is a “school case” which leads to unfairness. The result of such “guidance” is that those businesses affected would have to either purchase allowances or reduce production. We cannot support this interpretation and a solution must be found for the process related emission coming from the production of lime.

## **2. Its solution does not represent a threat for the EU ETS and Climate Change policy**

In Europe, the lime sector, as said earlier on, is marginal within the EU Emission Trading Scheme. Its position accounts for only 1.7 % of the total CO<sub>2</sub> emission of the EU (25).

If we consider only a national point of view, indeed, each Member States is responsible to allocate its “emitters”. The four largest lime productions in Europe are still a very small part of the traded emissions. In Germany, it accounts for 1.6 %, in France it accounts for 2.1 %, in Belgium 5.8 % and in Italy 1.3 %. A smaller lime producing country like Denmark accounts for 0.3 % of the total Danish emissions.

Without taking the process emission into account as a fair interpretation of the relevant allocation criterion referring to the technical potential to reduce CO<sub>2</sub>, these figures would respectively become only 0.54 % in Germany, 1.9 % in France, 1.93 % in Belgium, 0.43 % in Italy and 0.1% in Denmark.

### **3. A simple solution is possible**

We understand that excluding process emission from the scope of the Emission Trading Scheme Directive could be an option. In fact, we consider that CO<sub>2</sub> process emission should not be subject to reduction and the allocation for CO<sub>2</sub> process emission should be given free of charge and certainly not be subject to auctioning. This option will guarantee appropriate reporting, monitoring and verification. Receiving full free allocations for lime process related emission is a legitimate request. Such provision could have easily taken place either in the Guidance<sup>3</sup> provided in the Communication of the European Commission in December 2005. This Communication should be amended on time for the second national allocation plan and this “harmonization” opportunity should be seriously considered. It cannot be considered as a favor.

A clearer provision could also be introduced when the Emission Trading Scheme Directive is to be revised. Even if the revision starts in June 2006 it will have no effect before 2012. Fortunately, a political decision taken today by one Member State in the current negotiation of the second national allocation plan, to provide permanently free allocation of allowances for lime process related emission (compliance factor 1) would not be against the European law. A solution may take place at national level without any prejudice to the European Climate Change policy. A political decision taken today by the European Commission would neither be against the European law and would have the advantage of leading to harmonization and prevent competition distortion. By virtue of the principle of non-discrimination, process CO<sub>2</sub> and combustion CO<sub>2</sub> must not be treated alike. The same activities in different Member States must not be treated differently. In conclusion, a permanently free allocation of allowances for the lime process related emission is possible and could save the lime future.

### **4. Further comments to improve the Emission Trading Scheme**

A solution on process emission cannot hide the need for improvements in other areas:

#### 4.1 Plant specific performance:

The technical and economical possibilities of our industry must be carefully considered, i.e. we need sectors or plant specific performance factors to be defined at national level. Indeed, most operations in the North of Europe are operated with rotary kilns, from limestone with high moisture. In addition the market structure is a key factor. For instance, the pulp industry is used to its own “captive lime” produced with rotary kilns. The Nordic lime producers are equipped as well with rotary kilns in order to back them up immediately. In the south, the picture is different because most of their operations are shaft kilns gas fired. The north and south cannot be compared like for like.

#### 4.2 Growth and new entrants

We should keep the possibility to grow and the introduction of new technical rules must be possible. Especially in the environmental protection area, we expect rising markets in particular in the protection of the environment in many areas such as water, gases, sewage or manures treatments. The soil protection is also a key market for the coming years, here polluted soils remediation will require lime as well. Stricter legislation is expected to improve the ambient air quality; these are several markets in which lime has a strong role to play. Can we anticipate a potential growth in these areas, if the first condition becomes buying CO<sub>2</sub> emissions allowances? In addition, When comparing two production

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<sup>3</sup> Brussels, 22.12.2005 COM(2005) 703 final Communication from the Commission “Further guidance on allocation plans for the 2008 to 2012 trading period of the EU Emission Trading Scheme”

plants having a growth potential, there is no reason that a plant having the highest technical level without reduction potential, which started for instance in the year 1998 is treated differently than an identically technical set up built in the year 2006 which will be subject to further emissions reduction. This cannot be managed on cynical way by expecting lime steel market decline in Europe or in direct opposition to the Lisbon Agenda. The environmental policy underlying the Emission Trading Scheme has not to be seen in the context of a “parallel decline of the secondary sector experienced in European economies”. EuLA strongly opposes the incorporation of such philosophy, as for instance, in the guidance document of the European Commission.

#### 4.3 Role of SMEs

The existing ETS Directive does not provide attention to SMEs. All kiln of the lime industry with a daily capacity of 50 t lime are included in the system. A 50 t lime/day kiln operation corresponds to an annual production of about 20.000 t CO<sub>2</sub> in total (combustion emission + process emission). Today, even the smallest enterprises are subject to all obligations of the Emission Trading Scheme. For small plants, appropriate provisions must take place for the monitoring, reporting and verification of CO<sub>2</sub> allowances. Apart from setting a threshold at say 25.000 t below which the plant will not be included in the Emission Trading Scheme Directive.

We must find in addition ways to give access the credits coming from joint implementation (JI) and Clean development mechanisms (CDM), where the price of 5 €/t is cheaper than the emission trading scheme.

#### 4.4 Re-carbonation or carbon sinks

The inclusion of natural lowering by re-carbonation must be considered based on scientific evidence.

#### 4.5 Allocation methods

The introduction of a benchmark system for the allocation of allowances may appear attractive as compared with grandfathering. As a matter of fact, it is unsuitable for the lime industry, because the products vary strongly depending on chemical, physical and petrography properties of the raw material, the type of kiln and above all, the quality requested by our customers. EuLA has recently made deep investigations on this allocation option. More than 130 kilns have been compared, and even compared for the same type of kiln in order to find out appropriate benchmarks.

The results are disappointing because the theoretical expectation is not confirmed on the ground. For instance, the same lime product with the same type of kiln, but in two different places, does not require the same amount of energy. Another question is pending; what about energy disruption such as biomass or even gas and by the way, natural gas is not available everywhere in Europe.

#### 4.6 Auctioning

The Commission recommends that Member States use Article 10 within the Emission Trading Scheme Directive that permits auctioning of 10% of the allowances “to collect experience in this allocation method” and to offset administrative costs of the Emission Trading Scheme and government purchase of Kyoto units. EuLA strongly opposes the use of auctioning; it would result in additional, unpredictable costs on business without providing any environmental benefits. Such costs would reduce spending on research, development and deployment of new and existing technologies.

#### 4.7 Low price product very sensitive to energy costs and non carbon constraint countries

The quantity of the available allowances is limited. Thus, we must compete as an industry with a small added value, with competitors, who have completely different margins during the pricing. The exorbitant increases of electricity prices due to the pricing of the allowances are an additional point (10% of our energy costs are electricity costs). The extraction of raw materials from natural limestone pits excludes a short term relocation, but what will happen if our main customers decide to relocate? In most cases, the technical possibilities or the economical possibilities for further saving of CO<sub>2</sub> are questionable. Thus the emission trading system for our industry can not expect significant decreases. It is existence-

threatening, because it will lead the enterprises to reduction of production and/or closures of production in Europe and production relocations to non carbon constraints countries. If the lime cannot be produced in Europe any more, it must be imported, probably from regions without emission trading or with lower technical standards and thus higher CO<sub>2</sub> emissions and additional emissions from transport. The environmental political goal of global emission reduction would then have no sense at all.

#### 4.8 Product substitution

Even if products substitution can take place in several markets, the lime cannot be substituted in other areas and remains an indispensable chemical raw material for the entire European Economy.

### **Conclusion**

Business, lime included, is one of the few sectors within the European Union that have achieved meaningful reductions in greenhouse gas emissions. Any analysis of further emission reductions required by the lime sector must be evaluated through a thorough cost-benefit analysis.

It has been repeated many times that the Emission Trading Scheme Directive was not a perfect tool. It has its merits leading to green house gas reduction to combat climate change. The European lime industry has done already an impressive CO<sub>2</sub> emission reduction since 1990 and these early actions have not been rewarded. The European lime industry is prepared to give a hand but invites the European authorities to seriously consider, now, a fair treatment for the lime process related emission which cannot be reduced unless by reducing the production.

Once again, the solution is simple: to provide permanently free allocation of allowances for lime process related emissions (compliance factor 1). This would not be against the European law and would not have a detrimental effect on the European Climate Change Policy and finally, this solution is in compliance with the allocation criterion of Emission Trading Scheme Directive but it is not applied.