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# Potential Impacts of the EU ETS on the European Lime Industry

Prepared for the European Lime Association



**NERA**

Economic Consulting

## **Project Team**

Daniel Radov  
Per Klevnas  
Adil Hanif

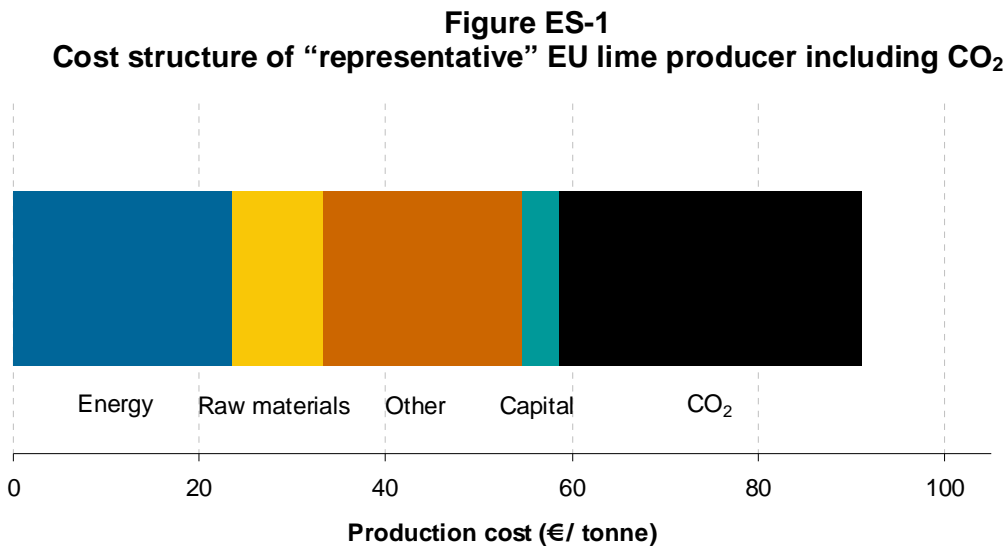
NERA Economic Consulting  
15 Stratford Place  
London W1C 1BE  
United Kingdom  
Tel: +44 20 7659 8500  
Fax: +44 20 7659 8501  
[www.nera.com](http://www.nera.com)

## Executive Summary

This report characterises the potential impacts of the EU Emissions Trading Scheme and proposed amendments to the EU ETS Directive on the European lime industry. The scope of the study is to set out the issues and undertake a preliminary analysis, based on data collected from major European lime producers.

Lime production is an energy intensive and CO<sub>2</sub> intensive industry with products that are standardised commodities. Most CO<sub>2</sub> emissions from lime are process emissions, with around 25 to 30 percent from fuel combustion. The potential to reduce emissions from the production of lime at abatement costs less than the expected price of emissions allowances appears to be limited.

The cost of CO<sub>2</sub> emissions from lime production arising under the EU ETS is very significant. At prices of €30 / tCO<sub>2</sub> – somewhat lower than recent forecasts for the post-2012 period – lime production cost would increase by more than 50 percent on average, making CO<sub>2</sub> the most significant single cost in lime production. Figure ES-1 shows representative costs of lime production.



**Source:** NERA analysis of data provided by EuLA members

The average cost of producing lime in the EU in 2006 was around €60 per tonne. Average prices were just under €70 per tonne. This means that the full CO<sub>2</sub> costs of the EU ETS would be nearly three times as large as long-term margins in the sector.

Current international trade in lime is limited, but there does not seem to be any reason that this situation should persist if significant cost differences are created. (Similar bulk low value materials are increasingly traded internationally.) Current trade to and from the EU is around 2 percent of the total EU market. Current trade patterns in lime are of limited relevance for the assessment of potential future trade patterns in the presence of significant emissions costs.

Data that we have collected from European lime producers—some of whom have operations in potential export countries, such as the former Soviet Union (FSU), North Africa, and other Mediterranean countries—suggests that non-EU producers have a cost advantage of €10-20 per tonne lime, before accounting for emissions costs. Reasons for this cost advantage include lower energy costs, lower labour and overhead costs, lower raw material costs, and / or less stringent regulation, depending on location.

Despite the production cost advantage, however, transport costs for lime are relatively high, and available data suggest that to date they have outweighed any existing differences in production costs. Based on a survey of several sources, we find that 2006 transport costs for dry bulk goods such as lime were in the region of €12-20 per tonne for short routes, around €20-25 per tonne for medium length routes, and €33-45 per tonne for long distance routes. Shipping costs have been high in recent years, however, and may decline in the future.

Based on these shipping costs, if EU producers faced the full cost of CO<sub>2</sub>, the average cost of lime production would rise by an amount higher than the transport cost over many medium-distance trade routes. If we take into account what the data suggest are pre-existing cost advantages in non-EU locations, the cost differential including CO<sub>2</sub> would rise to levels that would make transport even over long distances economical.

Using the information about the cost of foreign production and transport costs that we have collected, we have analysed the potential production (and by implication, emissions) leakage from the lime sector. Increased import of lime from abroad is likely to require investment in lime production capacity outside the EU. Because investment in export capacity can be risky, we limit the level of potential export capacity based on the assumed level of local demand growth in foreign markets. (Rising local demand makes it possible for foreign exporters to protect themselves against the possibility that the EU export market could become less attractive in the future.)

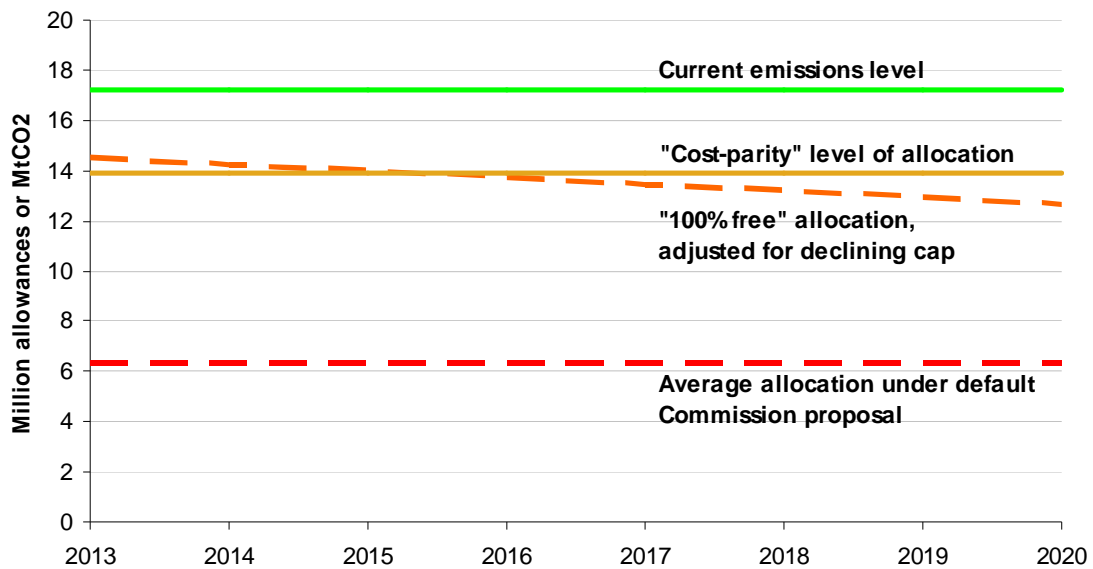
Overall, it appears that leakage would be a concern for EU lime markets with cost characteristics similar to the aggregate EU data that we have collected, subject to the assumptions we have made about available export capacity and the data we have collected on transport costs. The risk of leakage would likely limit the ability of EU lime producers to pass through the cost of CO<sub>2</sub> emissions without losing market share and long-term profits.

During Phase I of the EU ETS, an examination of the data indicates that EU lime producers did not pass the opportunity costs of allowances on to their customers. This suggests that the lime sector may instead pass through only the net cost of allowances, to reduce the risk that it would begin to lose market share to foreign production.

If firms pass through the net cost of emissions allowances, the free allocation of emissions allowances could contribute to reducing leakage. We therefore analyse the extent of leakage that might occur under a number of different allocation scenarios. (All of the results are subject to the caveat that the leakage potential has been assessed using data aggregated at the European level, which may omit important local or regional features of the different European lime markets.) Our analysis suggests that at the default level of allocation described in the recent European Commission proposal to amend the EU ETS Directive there would be significant risk of exposure to imports from the former Soviet Union (FSU) and the Mediterranean.

We find that allocation of just over 80 percent of recent emissions would be required to keep representative EU production costs no higher than the cost of supplying lime to the EU from the Mediterranean. (We refer to this as the “cost-parity” allocation level.) Allocation of around 60 percent of recent emissions would be required to keep EU production costs below the cost of supply from the FSU. In contrast, the European Commission’s default allocation trajectory described in its proposed amendments to the ETS Directive would result in an average allocation of around 35 percent of recent emissions. Even under the “100 percent free allocation” option for exposed industries described in the Commission’s proposal, the sector would not receive sufficient allowances to keep costs below the cost of supply from the Mediterranean.<sup>1</sup> This is illustrated in Figure ES-2.

**Figure ES-2**  
**Comparison of 100% free allocation with “cost-parity” level of free allocation**



**Source:** NERA

**Notes:** The figure shows the estimated emissions and total allocation to EU lime producers participating in this study, under different allocation alternatives. Dotted lines correspond to our interpretation of the recent European Commission proposal to amend the ETS Directive.

We also consider various scenarios to estimate the sensitivity of our results to some of the assumptions. Under most plausible scenarios, the lime sector would be at risk of some leakage—and in some cases the levels of leakage appear to be relatively high.

<sup>1</sup> We interpret the proposal to mean that 100 percent of a declining benchmark would be allocated to exposed sectors, so the actual number of allowances to the sector would decline over Phase III.

# NERA

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