

Exposure to Carbon leakage for the Lime Industry

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IMA - Europe membership

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- EBA
- ESMA
- EUBA
- EUROFEL
- EUROGYPSUM
- EUROSIL
- EUROTALC
- IDPA
- KPC-Europe
- EULA**

EuLA Membership



- Austria
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- Bulgaria
- Croatia
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Norway
- Poland
- Portugal
- Slovak Republic
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom

All Members

23 countries
28.4 M t of lime and dolime
Over 100 companies
11.000 employees
600 lime kilns at > 200 sites
2.5 billion € turnover

Lime, an essential product for a number of EU sectors

**Steelmaking &
Non-ferrous metals**



Construction



**Water
treatment**



**Civil
engineering**



**Gas
treatment**



Refractories



**Agriculture &
Forestry**



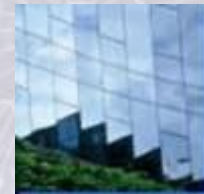
Pulp and Paper



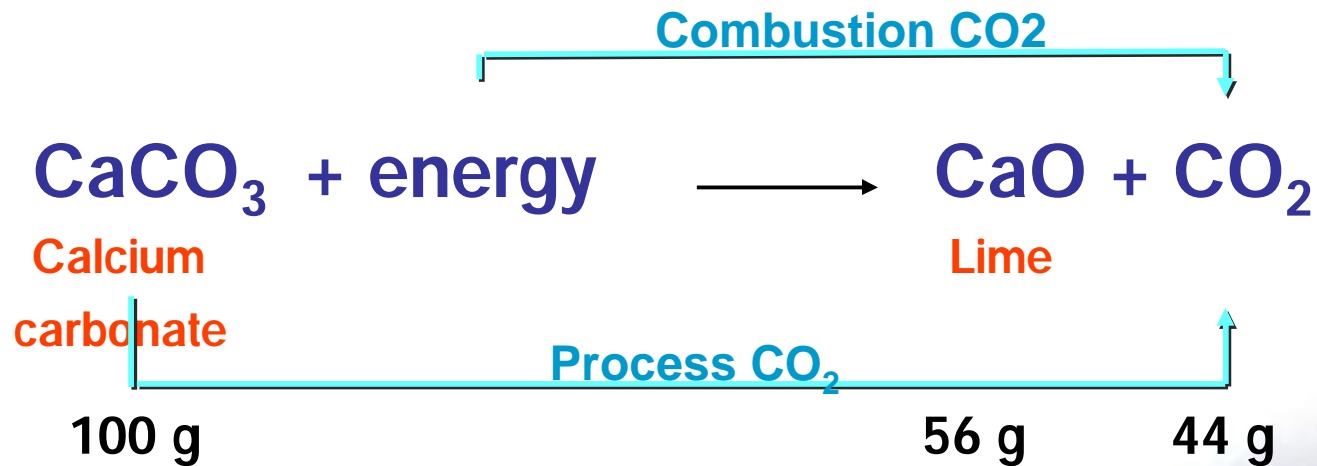
Chemicals



Glass

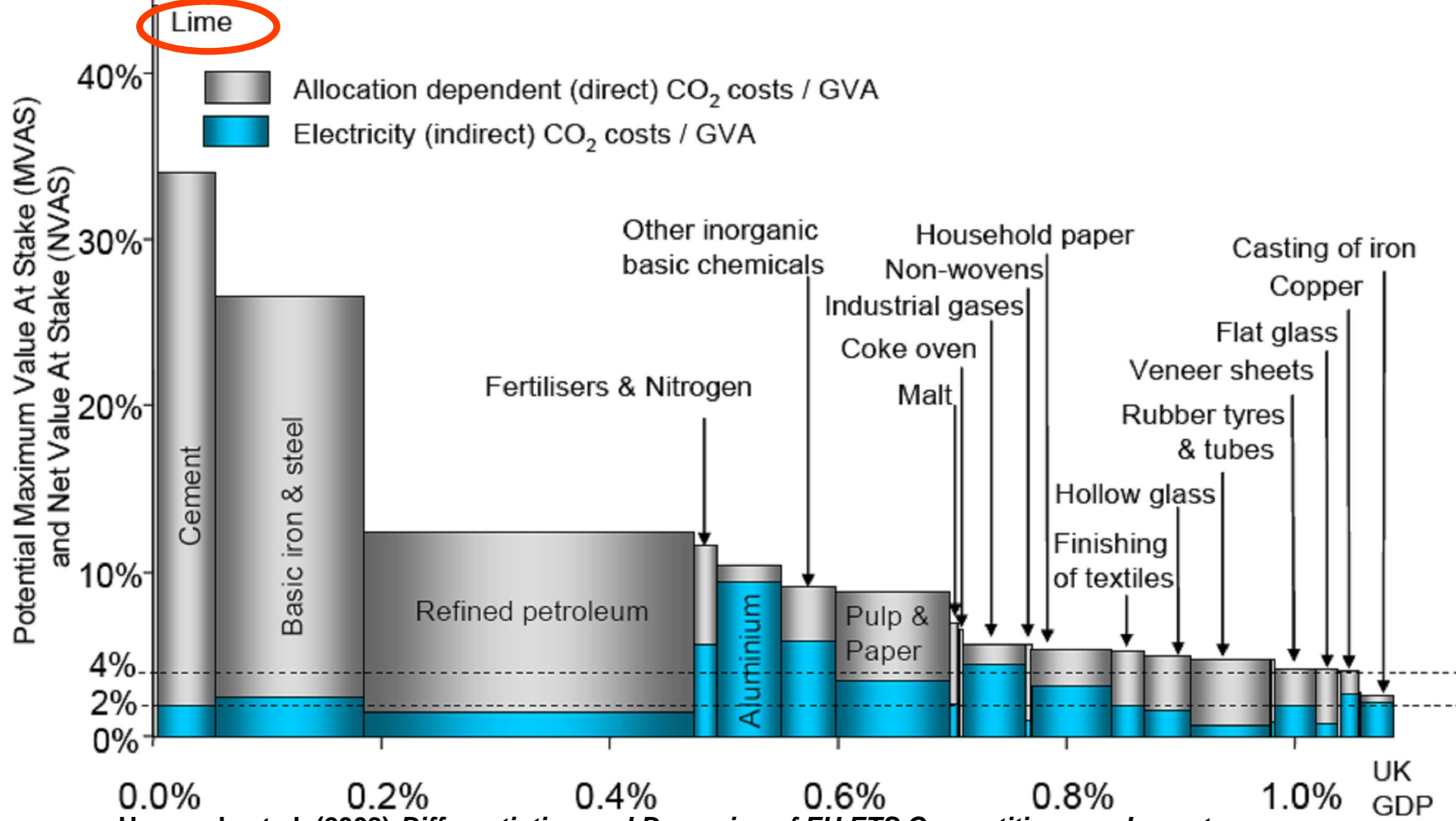


The Lime production process



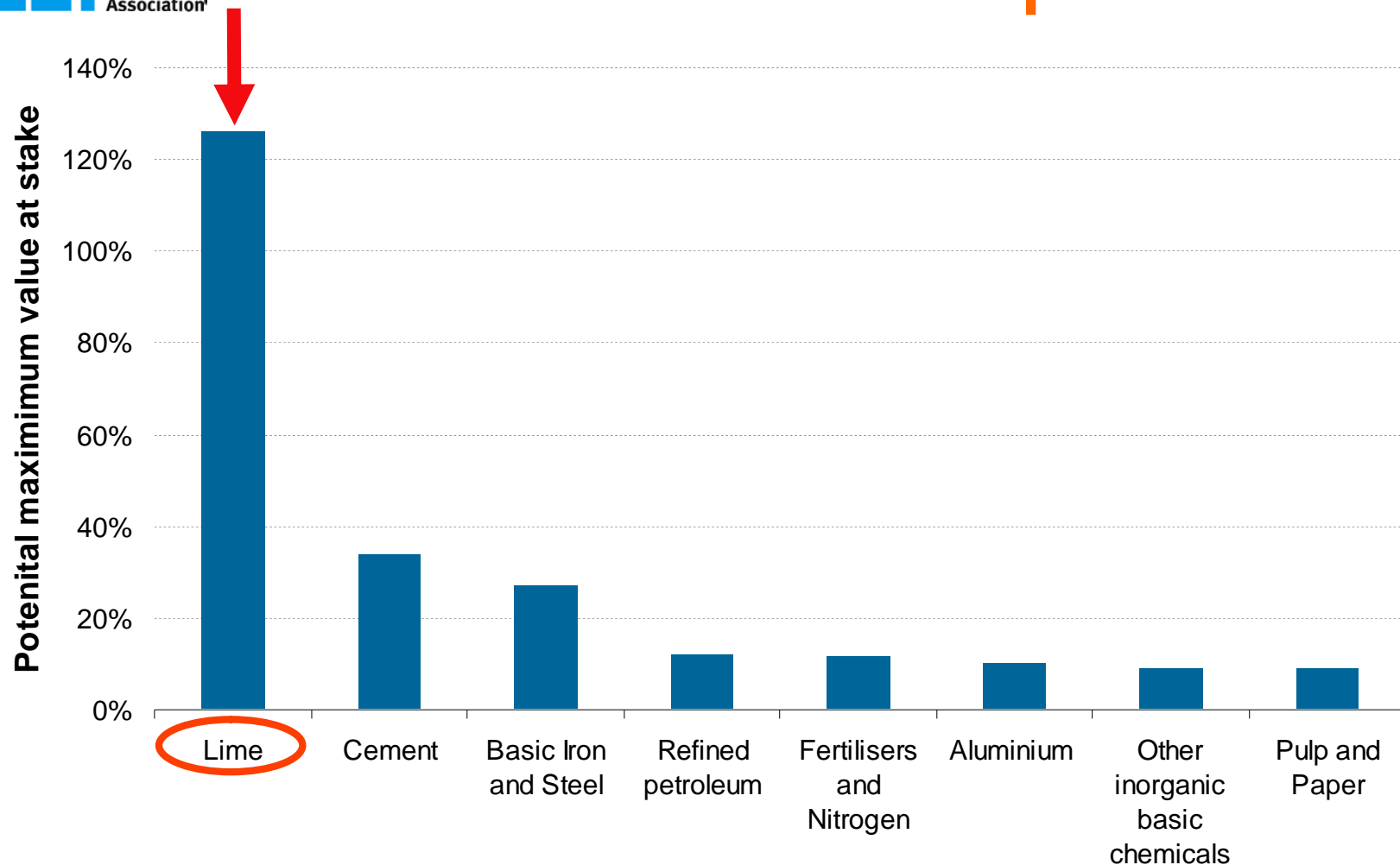
- The production of 1 tonne of lime generates 1 to 1.6 tonne of CO₂
- 2/3 of CO₂ emissions come from the decarbonation of limestone: i.e. "process CO₂"
- 1/3 of CO₂ emissions comes from the fuel combustion: i.e. "combustion CO₂"

The most exposed industry



Hourcade et al. (2008) *Differentiation and Dynamics of EU ETS Competitiveness Impacts*

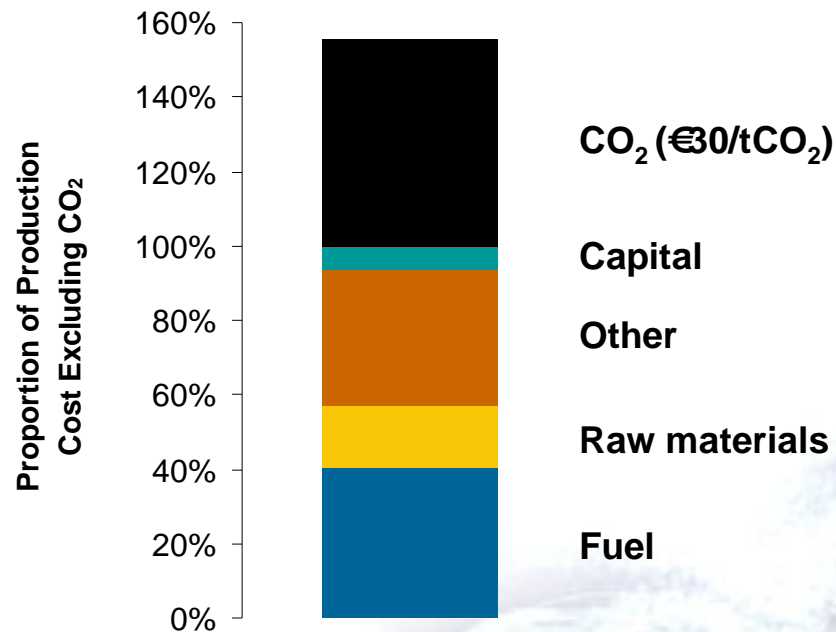
The most exposed industry



Source: Hourcade et al. (2008) *Differentiation and Dynamics of EU ETS Competitiveness Impacts*

CO₂ value & Lime costs structure

Average cost of EU lime production

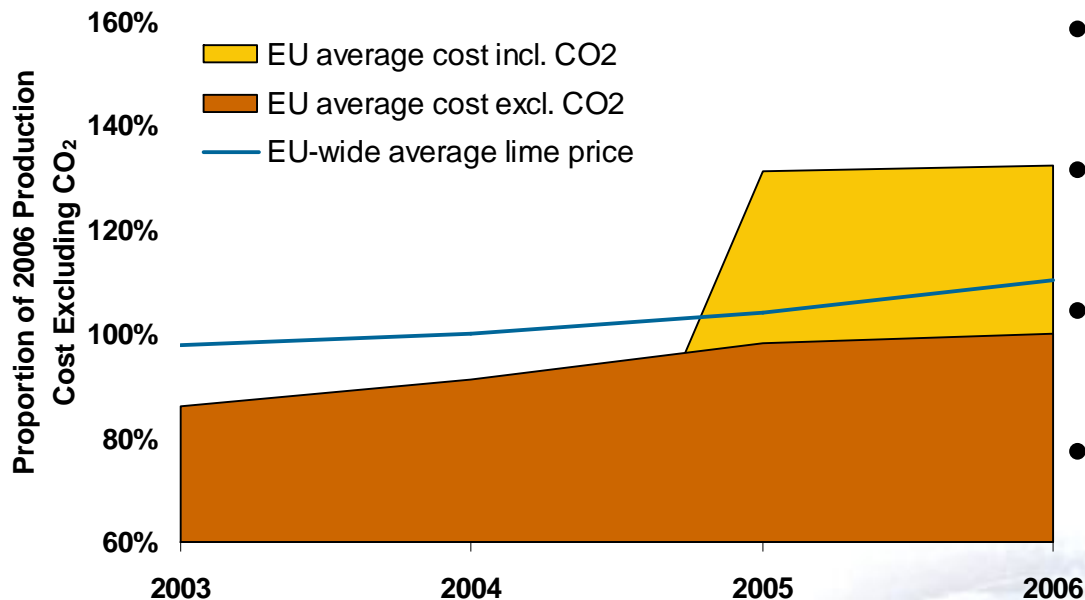


Sources: NERA analysis of data provided by EuLA member companies

Note: Assumes a CO₂ price of €30/tCO₂

CO₂ costs of Lime production are currently not passed through to prices

EU lime production cost and prices (2003-2006)

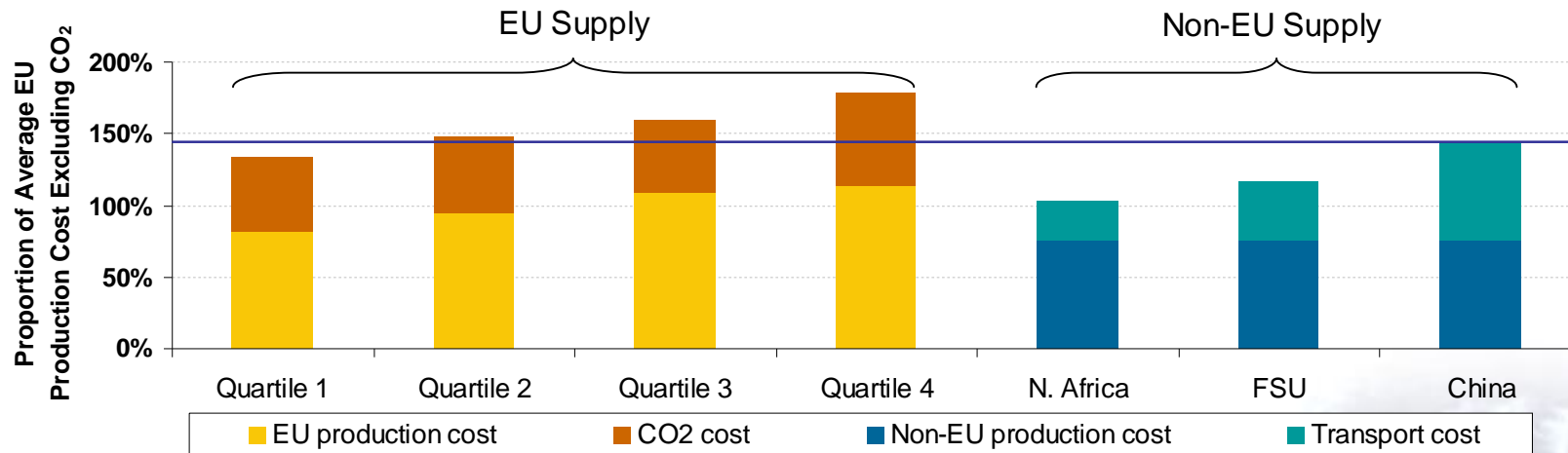


- Lime prices have risen with higher fuel costs
- However, prices did not rise with CO₂ costs in 2005-6
- Fuel costs are global, CO₂ costs are EU-specific
- Fuel costs are direct costs; with free allocation CO₂ costs are opportunity costs

Sources: NERA calculations based on data from PointCarbon, EuLA member companies, Eurostat, Platts, McCloskey

Notes: Calculations do not account for all factors that could affect prices, but are based on 2006 production cost data and historic fuel and CO₂ prices.

CO₂ Costs compared to Transport Costs



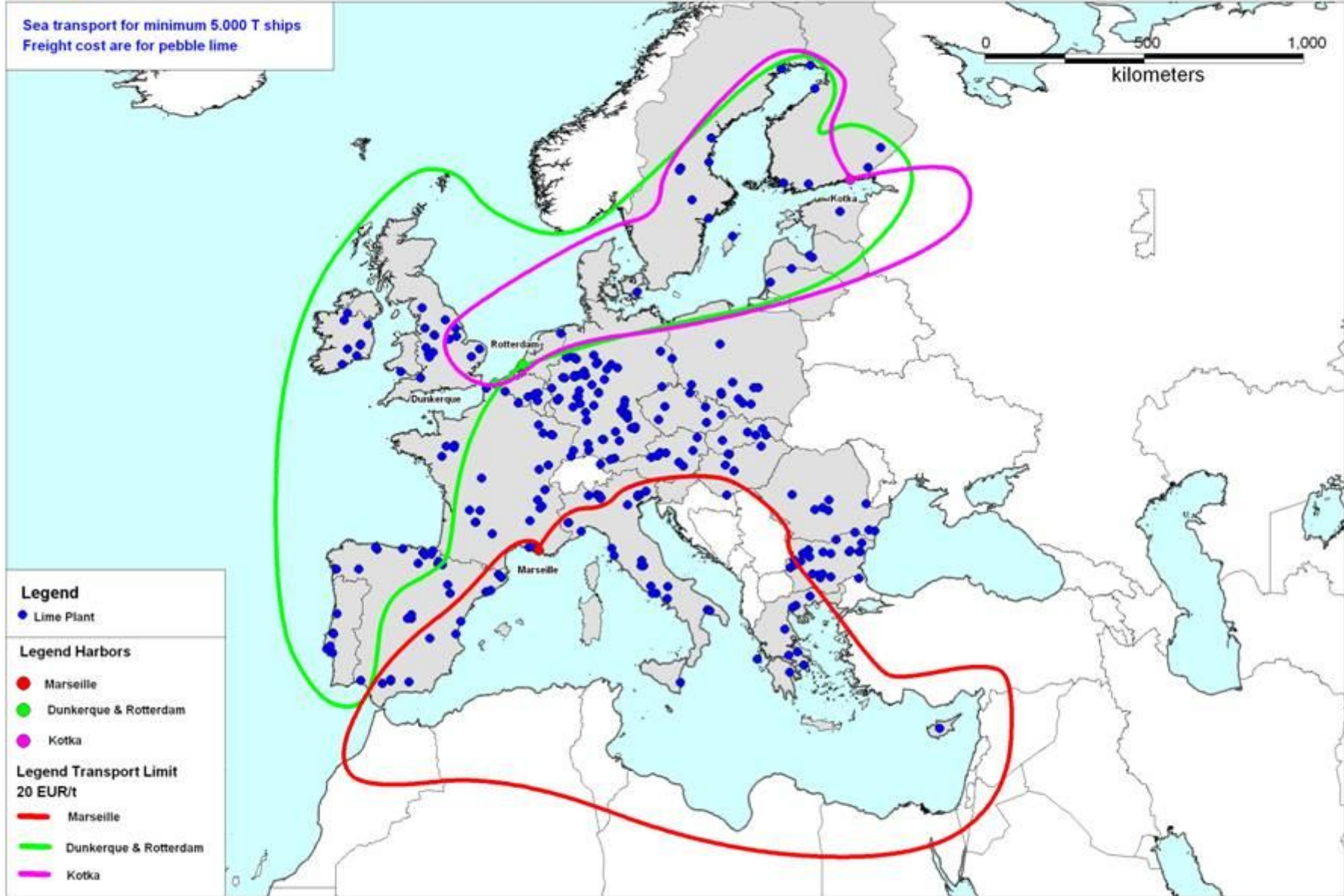
Sources: NERA calculations based on data from EuLA member companies and literature survey of shipping costs.

Notes: Assumes CO₂ price of €30/tCO₂. The first four bars show the average cost for quartiles of EU volumes produced. Non-EU production cost are assumed to be €45/t lime, a central estimate based on limited data provided by EuLA member companies. Transport costs are estimates to EU border and not varied by EU region.

- A CO₂ price of €30/tCO₂ could make economic supply of lime from several non-EU regions.

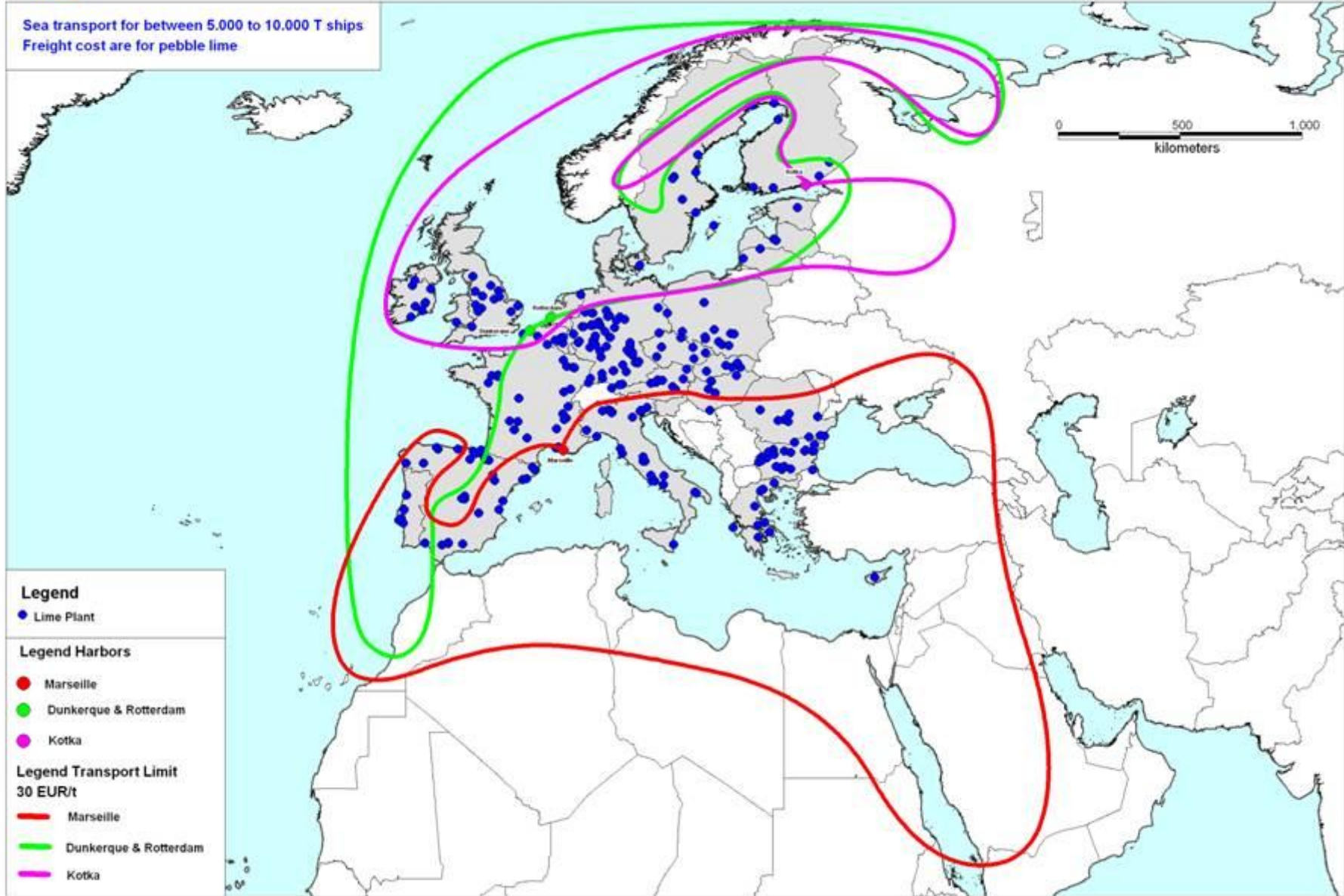
Sea transport costs

SEA TRANSPORT OPTIONS AT FREIGHT COST OF 20 EUR/T



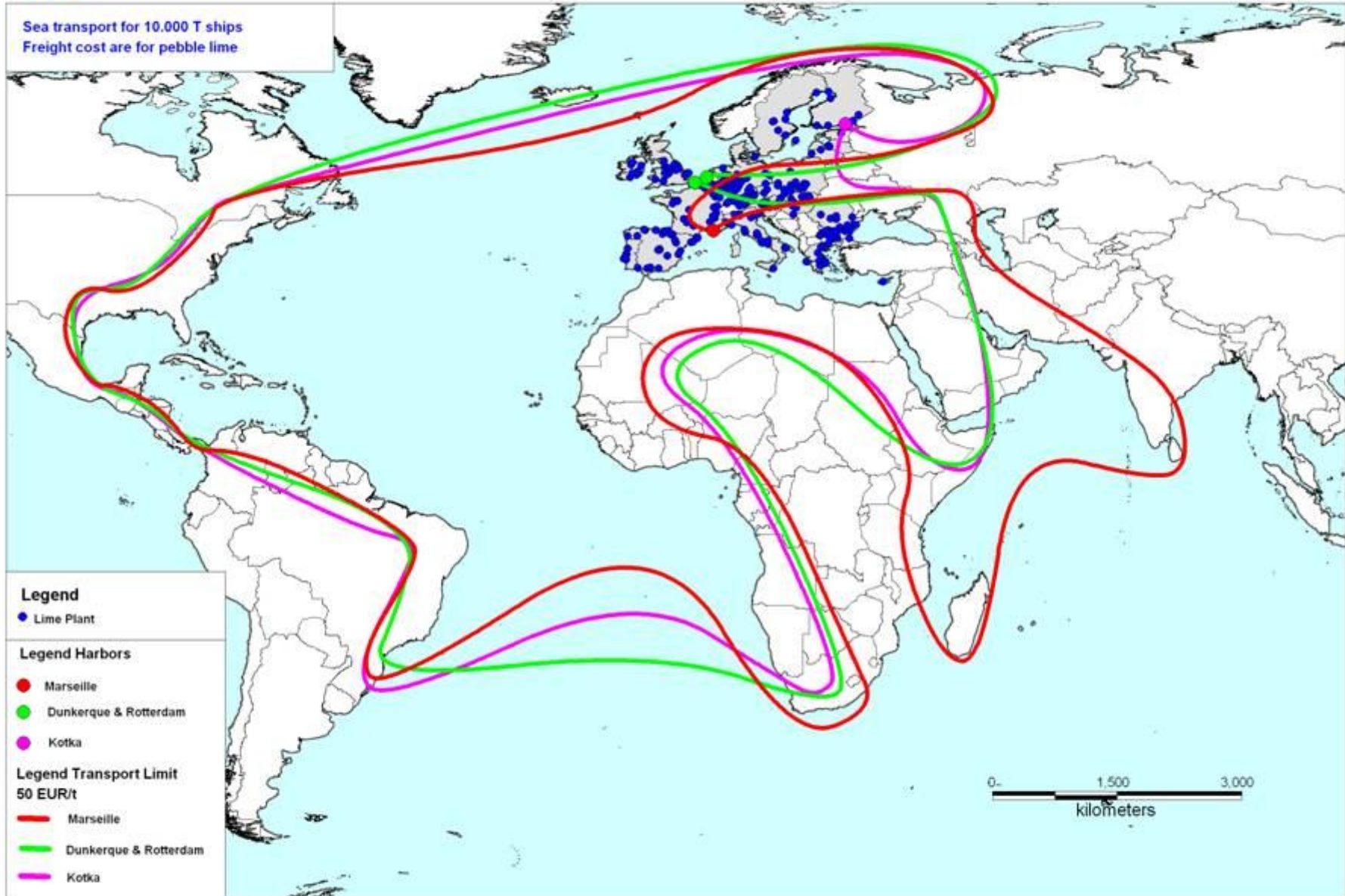
Sea transport costs

SEA TRANSPORT OPTIONS AT FREIGHT COST OF 30 EUR/T



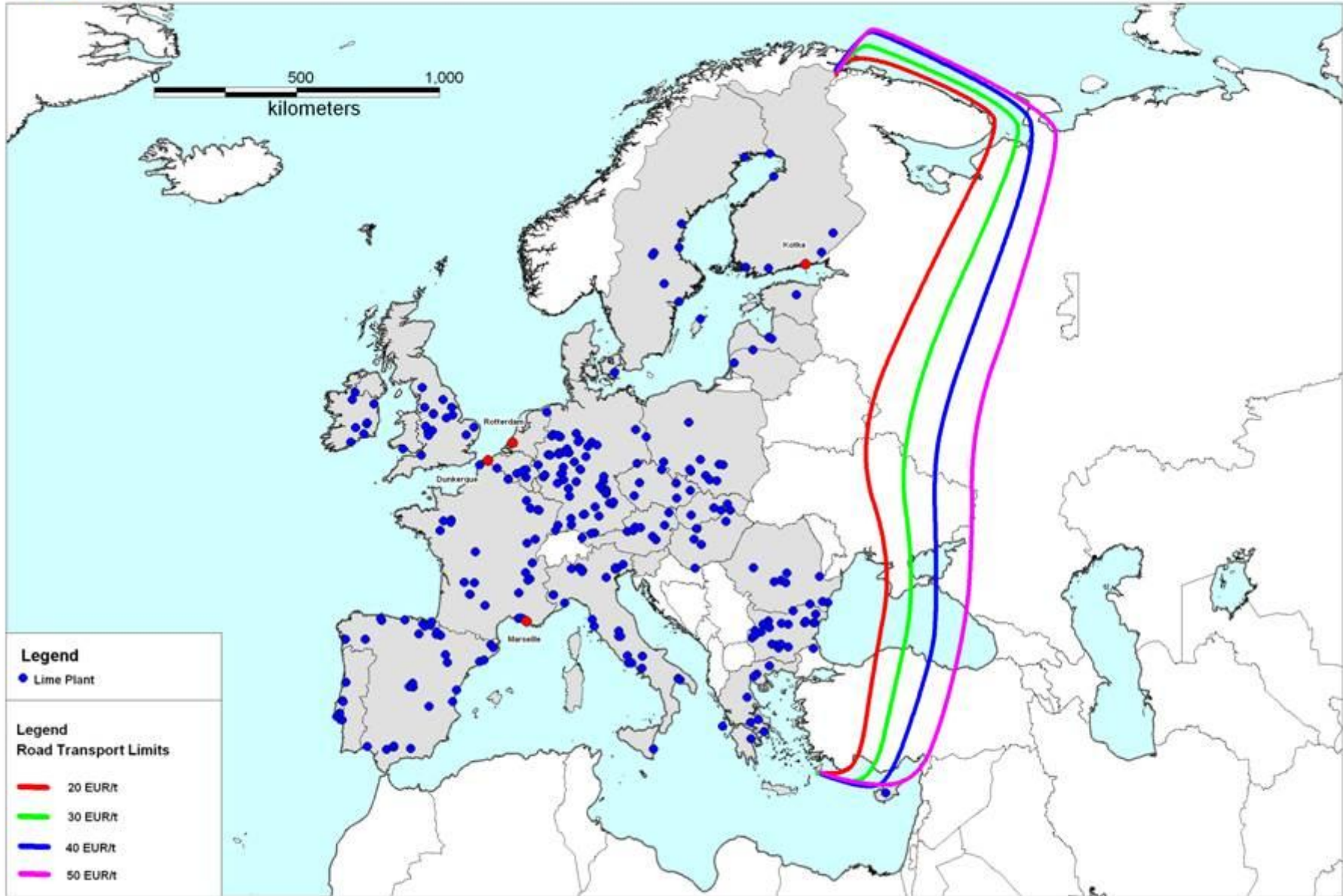
Sea transport costs

SEA TRANSPORT OPTIONS AT FREIGHT COST OF 50 EUR/T



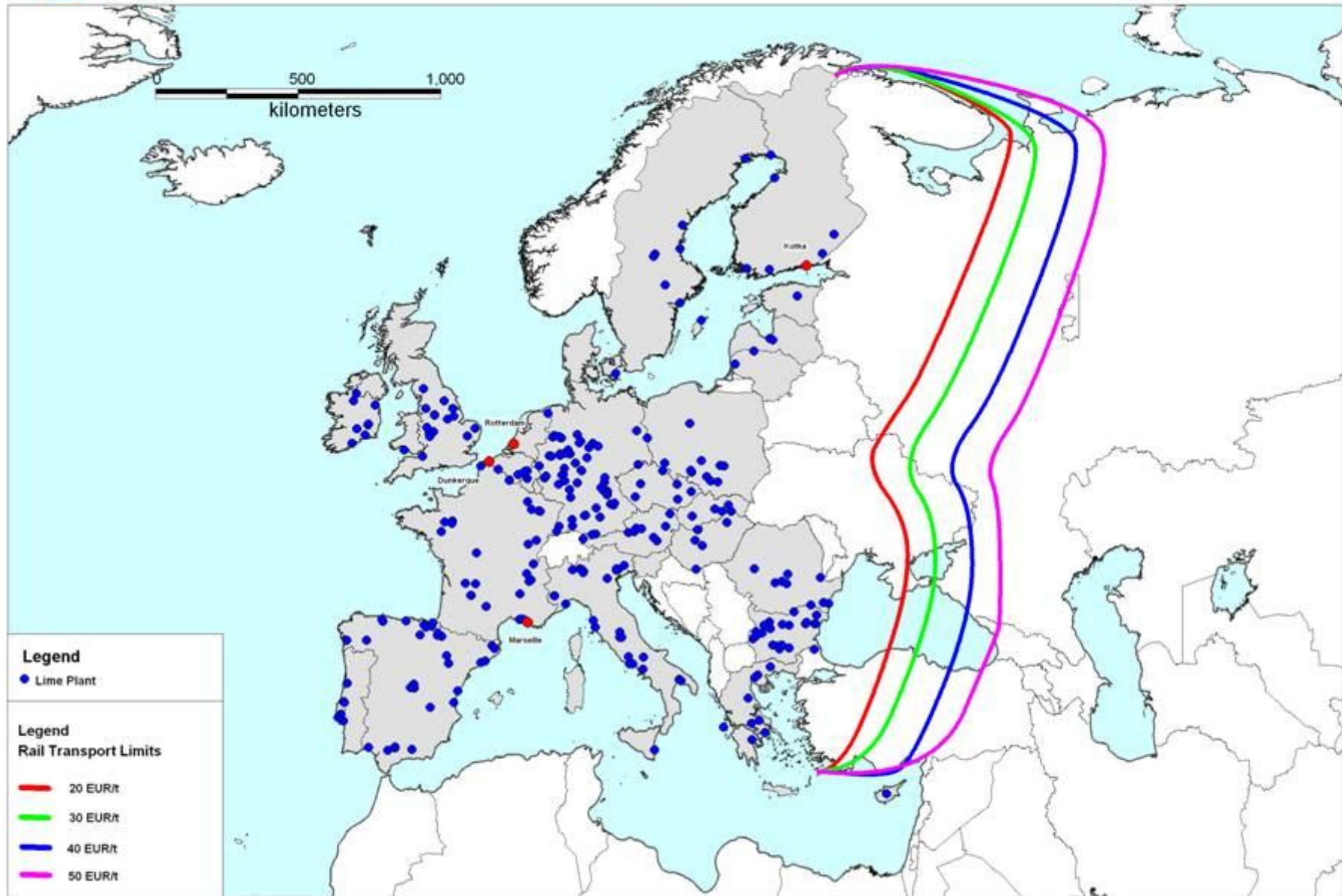
Road transport costs

ROAD TRANSPORT ISO CURVE TO EU MEMBER STATES BORDERS

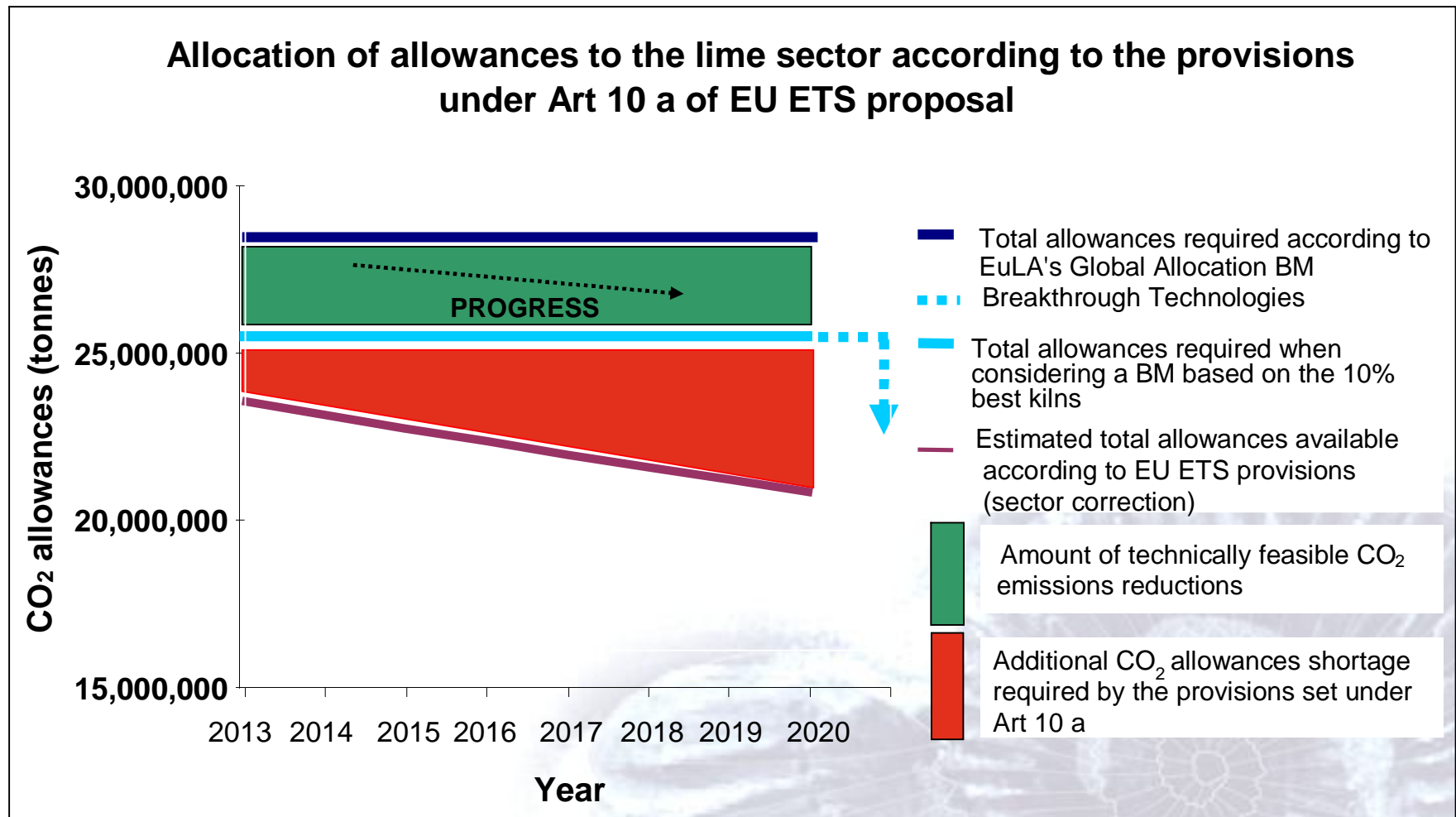


Rail transport costs

RAIL TRANSPORT ISO CURVE TO EU MEMBER STATES BORDERS



Total CO₂ costs = abatement cost + purchase of allowances



In Summary

- Based on collection of data's by an independent party:
 - Cost structure in EU
 - Market value in Europe
 - CO₂ cost
 - Transportation cost
 - Cost of production in countries without comparable carbon constraints

**Carbon leakage is related to the gap between
Production Costs in the EU including CO₂ costs
and
Production Costs of products imported from outside the EU incl.
transport costs**

Thank you for your attention

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