

# **Cement industry decarbonization and power consumption**

*Relevance of indirect cost compensation*

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# Current situation of cement industry

- **Cement industry is currently not deemed to be exposed to a significant risk of carbon leakage due to indirect emission costs**
  - But: The sector meets the criteria for more than 4 years
- **The cement industry is severely impacted:**
  - Energy costs represent 30% of cost base
  - Electricity cost is between 25% and 54% as a share of GVA.
  - In indirect intensity ranking of EU COM, cement is third
- **EU Guidelines on state aid for environmental protection and energy considers that a sector is sensitive to electricity costs when it has:**

***“an electro-intensity of at least 20% and belongs to a sector with a trade intensity of at least 4% at EU level.”***

Non-eligibility brings a competitive disadvantage in downstream construction markets

# Decarbonation will increase electricity demand further

- **Wide-scale deployment of low-CO2 technologies will lead to a shift in emissions profile and increase electricity consumption**
- **Higher electricity demand arises from:**
  - Increased use of low-carbon clinker substitutes (e.g. fly ashes, slags)
  - Implementation of carbon capture technologies will double or triple energy demand
  - Potential electrification of parts of cement manufacturing
- **Shift from direct to indirect emissions will take place in cement industry, while high CO2 costs will still impact wholesale electricity prices**

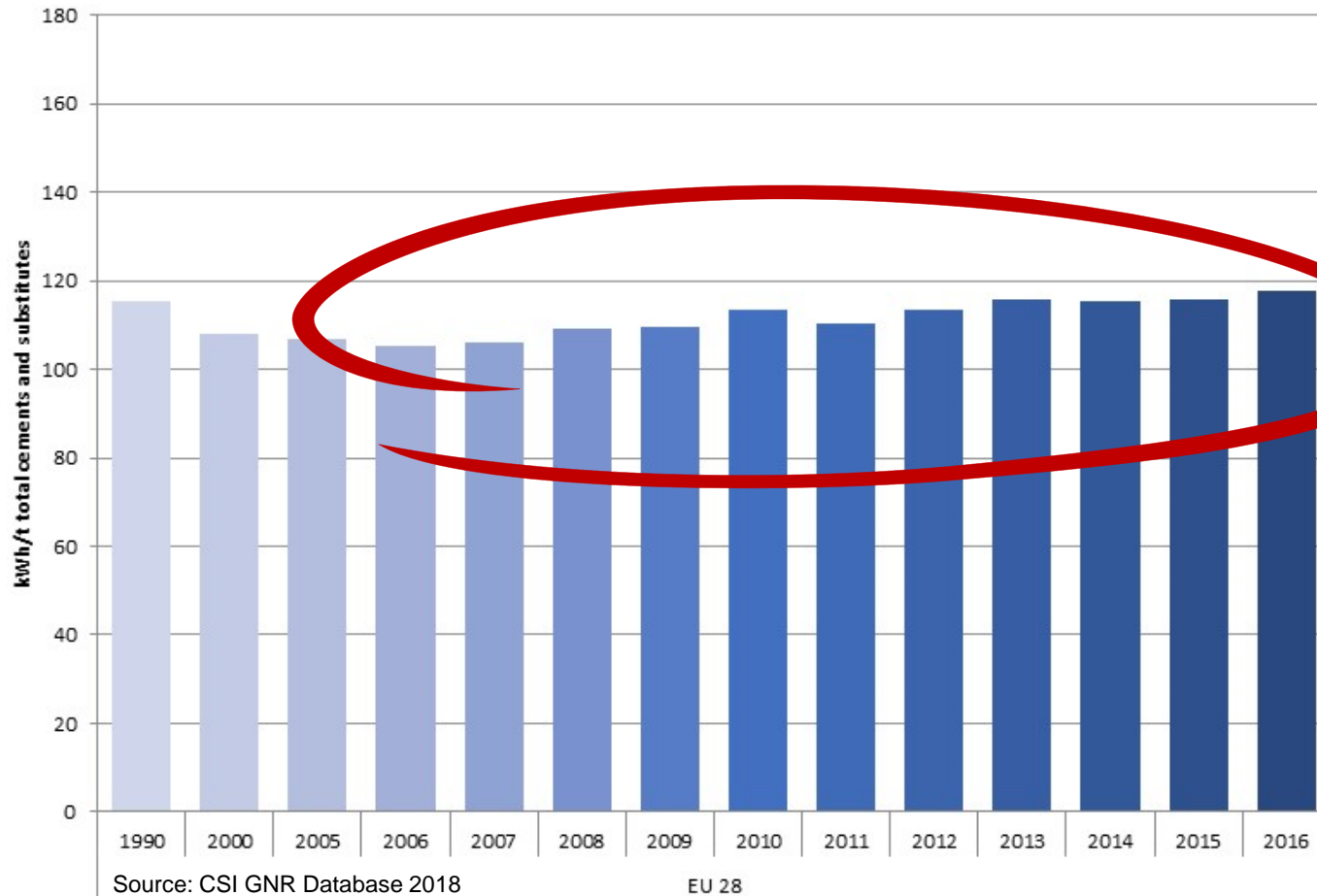
Implementation of carbon capture technologies will increase production costs by 25% to 100%

# Cement power plant consumption in EU28 (1990-2016)

## Cement plant power consumption - Weighted average (all plants)

Grey and white cement (33AGW)

All GNR Participants - EU 28 (coverage: 96% in 2010, 93% in 2015, 90% in 2016)



CO2 footprint optimization via alternative raw materials and fuels utilization leads to increasing electricity demand in EU28

# The nexus between carbon prices and power prices

European power forward prices



European CO<sub>2</sub> prices Dec'19 contract



## Policy asks of cement industry

- **Align eligibility for compensation of indirect costs with eligibility for free allowances, determined by carbon leakage list**
- **In targeted consultation European Commission has used a combined indicator based on trade intensity and indirect emissions intensity with an arbitrary threshold at 0.15**
- **CEMBUREAU suggests an indirect emissions criterion set at an emission intensity of more than 1 kg CO<sub>2</sub> / € GVA**

CEMBUREAU Proposal would reduce list of eligible sectors 20 to 12

# CEMBUREAU Proposal

EU ETS phase 4 Preliminary Carbon Leakage List  
Carbon Leakage Indicator underlying data  
Source: European Commission, May 2018

NA	Sector	(1) Trade intensity 13-'15	(2a) Direct emission intensity [kg CO2 / EUR] 13-'15	(2b) Indirect emission intensity [kg CO2 /EUR] '13-'15
38,21	Hazardous waste	n/a	n/a	n/a
20,11	Manufacture of industrial gases	6,00%	1,728	15,091
5,20	Mining of lignite	1,70%	0,000	3,057
24,42	Aluminium production	35,20%	1,618	3,011
24,43	Lead, zinc and tin production	30,60%	1,342	2,025
17,12	Manufacture of paper and paperboard	27,80%	1,528	1,482
24,10	Manufacture of basic iron and steel and of ferr	25,70%	6,859	1,414
14,11	Manufacture of leather clothes	83,00%	0,000	1,383
20,13	Manufacture of other inorganic basic chemica	54,00%	1,679	1,359
23,51	Manufacture of cement	10,10%	22,891	1,330
17,11	Manufacture of pulp	48,10%	0,969	1,085
19,20	Manufacture of refined petroleum products	25,80%	11,440	1,031

n/a No data record

included in current indirect list (3rd TP)

CEMBUREAU Proposal would reduce list of eligible sectors from 20 to 12

# Alternative – Setting a combined indicator of 0.1

EU ETS phase 4 Preliminary Carbon Leakage List  
Carbon Leakage Indicator underlying data  
Source: European Commission, May 2018

Sector	(1) Trade intensity	(2a) Direct emission intensity [kg CO <sub>2</sub> / EUR]		(2b) Indirect emission intensity [kg CO <sub>2</sub> / EUR]		Combined indicator (trade intensity x indirect emission intensity)
		13-15	13-15	13-15	13-15	
NA Hazardous waste	n/a					
20,11 Manufacture of industrial gases	6,00%	1,728	15,091	0,905		
7,10 Mining of iron ores	86,40%	2,734	0,490	0,423		
8,91 Mining of chemical and fertiliser minerals	62,30%	0,162	0,262	0,163		
10,62 Manufacture of starches and starch products	18,50%	1,847	0,949	0,176		
13,10 Preparation and spinning of textile fibres	46,50%	0,011	0,527	0,245		
14,11 Manufacture of leather clothes	83,00%	0,000	1,383	1,148		
17,11 Manufacture of pulp	48,10%	0,969	1,085	0,522		
17,12 Manufacture of paper and paperboard	27,80%	1,528	1,482	0,412		
20,13 Manufacture of other inorganic basic chemicals	54,00%	1,679	1,359	0,734		
19,20 Manufacture of refined petroleum products	25,80%	11,440	1,031	0,266		
20,14 Manufacture of other organic basic chemicals	49,00%	1,763	0,390	0,191		
23,14 Manufacture of glass fibres	28,40%	0,735	0,731	0,208		
24,51 Casting of iron	41,00%	0,472	0,719	0,295		
20,15 Manufacture of fertilisers and nitrogen compo	31,80%	7,084	0,553	0,176		
16,21 Manufacture of veneer sheets and wood-base	23,60%	0,408	0,685	0,162		
20,16 Manufacture of plastics in primary forms	36,00%	0,182	0,685	0,247		
23,99 Manufacture of other non-metallic mineral pro	19,40%	0,461	0,674	0,131		
20,60 Manufacture of man-made fibres	44,10%	0,295	0,638	0,281		
23,11 Manufacture of flat glass	23,70%	5,460	0,631	0,150		
20,17 Manufacture of synthetic rubber in primary for	55,10%	0,485	0,612	0,337		
23,13 Manufacture of hollow glass	24,70%	1,961	0,593	0,146		
7,29 Mining of other non-ferrous metal ores	83,70%	0,000	0,560	0,469		
13,95 Manufacture of non-wovens and articles made	38,50%	0,060	0,554	0,213		
23,51 Manufacture of cement	10,10%	22,891	1,330	0,134		
23,31 Manufacture of ceramic tiles and flags	41,10%	2,002	0,548	0,225		
24,10 Manufacture of basic iron and steel and of ferr	25,70%	6,859	1,414	0,363		
11,06 Manufacture of malt	32,70%	0,526	0,495	0,162		
24,42 Aluminium production	35,20%	1,618	3,011	1,060		
24,34 Cold drawing of wire	26,60%	0,042	0,466	0,124		
20,12 Manufacture of dyes and pigments	48,50%	0,621	0,449	0,218		
5,10 Mining of hard coal	62,10%	0,009	0,393	0,244		
24,43 Lead, zinc and tin production	30,60%	1,342	2,025	0,620		
10,41 Manufacture of oils and fats	43,40%	0,586	0,379	0,164		
24,31 Cold drawing of bars	37,00%	0,342	0,365	0,135		
27,20 Manufacture of batteries and accumulators	61,50%	0,000	0,322	0,198		
24,46 Processing of nuclear fuel	36,30%	0,290	0,302	0,110		
8,11 Quarrying of ornamental and building stone, li	35,30%	0,096	0,298	0,105		
30,99 Manufacture of other transport equipment n.e.	48,20%	0,000	0,297	0,143		
23,43 Manufacture of ceramic insulators and insulat	55,50%	0,034	0,296	0,164		
24,45 Other non-ferrous metal production	83,50%	0,046	0,289	0,241		
27,31 Manufacture of fibre optic cables	57,80%	0,000	0,285	0,165		
24,20 Manufacture of tubes, pipes, hollow profiles ar	48,50%	0,191	0,282	0,137		
16,22 Manufacture of assembled parquet floors	36,60%	0,000	0,274	0,100		
24,44 Copper production	35,10%	0,485	0,714	0,251		
8,99 Other mining and quarrying n.e.c.	173,30%	1,948	0,253	0,438		
23,20 Manufacture of refractory products	44,20%	0,703	0,227	0,100		
13,20 Weaving of textiles	59,20%	0,019	0,221	0,131		
23,44 Manufacture of other technical ceramic produ	62,50%	0,064	0,199	0,124		
26,11 Manufacture of electronic components	84,40%	0,009	0,172	0,145		
27,90 Manufacture of other electrical equipment	66,50%	0,009	0,168	0,112		
21,10 Manufacture of basic pharmaceutical products	88,60%	0,054	0,162	0,144		
13,91 Manufacture of knitted and crocheted fabrics	65,90%	0,008	0,160	0,105		
25,71 Manufacture of cutlery	86,80%	0,000	0,119	0,103		

n/a No data record  
included in current indirect list (3rd TP)

- Follows European Commission's approach of a combined indicator based on trade intensity and indirect emissions
- Keeps current sectors on the list
- Includes additional sectors at risk of carbon leakage
- Leads still to targeted list

Alternative approach would increase list of eligible sectors from 20 to 54





**Thank you!**