

Determining appropriate carbon leakage thresholds in the ENVI ETS report

A special briefing for the ENVI shadow rapporteurs

May 2016

Executive Summary

Ian Duncan MEP, the rapporteur for the ETS revision dossier in the EU parliament's ENVI committee, recently announced a six-day delay in the publication of his draft report. Publication was specifically postponed to take account of emerging developments in the trade and emissions intensity of the cement sector. These changes potentially affect the opinions of the shadows when deciding on the best options to address carbon leakage risks. It also potentially affects their opinions concerning other key Phase 4 design elements explored in Duncan's "Skeleton Options" paper. This briefing seeks to be considered alongside other evidence submitted to, and commissioned by, the ENVI ETS rapporteur and shadows.

In this briefing we will explore the following issues:

1. **Changes in the trade intensity and the emissions intensity of the cement sector.**
2. **How changes to the cement sector affect the application of the correction factor:**
 - a. **in the Commission proposal,**
 - b. **in the "targeted approach" from the Commission's Impact Assessment,**
 - c. **in the UK/French tiered proposal, and**
 - d. **in the draft opinion of Mr Fredrick Federley MEP, the ITRE rapporteur (exploring a high-ambition variation with a 2.6% LRF).**

The briefing also arrives at the following recommendations:

3. The ENVI draft should contain:

- **a highly targeted set of carbon leakage thresholds which follow the lead of the Federley draft report in ITRE** – this can avoid the correction factor and create opportunities for more environmental ambition.

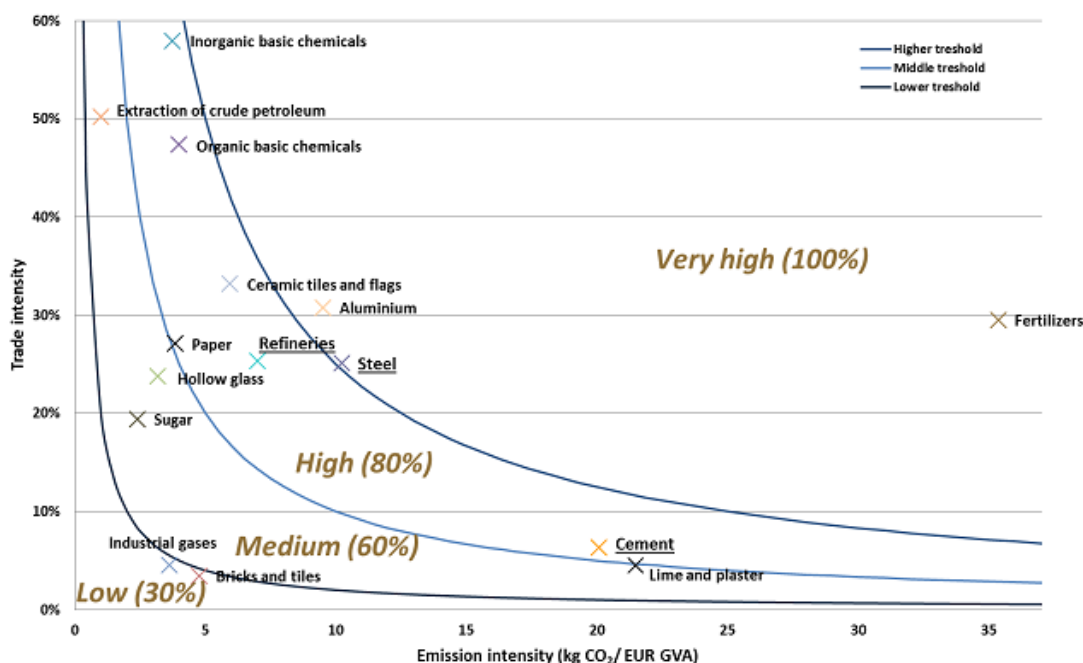
a continuation of the five-year carbon leakage periods from Phase 3, or at least a second data gathering exercise in the middle of the period – in order to avoid locking in carbon leakage protections for a decade even though the underlying data might change over time.
- **a proposal to ignore changes in emissions intensity data for those sectors whose emissions intensity has grown relative to the last period when it was assessed.**

1. Changes to trade intensity and emissions intensity in the cement sector

In a recent briefing note to the ENVI shadow rapporteurs, Ian Duncan highlighted that both the emissions intensity (in kgCO₂/€GVA) and the trade intensity of the cement sector has risen sharply since 2011. These two parameters multiplied together determine each sector's carbon leakage risk factor under the Commission legislative proposal. The crux of the problem Mr Duncan highlighted is that the Commission's Impact Assessment explicitly relies on 2009-2011 data (see **Figure 1**), while when it comes to actually determining Phase 4 free allocation the Commission's legislative proposal intends to ultimately use data from 2016-2018. The shadow rapporteurs and other stakeholders are therefore at risk of using obsolete information to inform their opinions on what the carbon leakage parameters should be.

Moreover, the main alternative proposals in the debate calculate each sector's leakage risk-factor in the same way as the Commission does, and have widely been evaluated using the same 2009-2011 risk values as published in the Commission's Impact Assessment (or to values drawn from even earlier Commission sources.)

Figure 1: Indicative carbon leakage groups in the 'Targeted' option package based on 2009-2011 data¹



Duncan's briefing note goes on to show that the carbon leakage risk factor for the cement sector has doubled between 2011 and 2014, rising from 1.23 to 2.46 (see **Table 1**). The 2014 values already put the cement sector firmly in the top, "high risk" tier (≥ 1.6) of the UK/French "balanced" tiering proposal, entitling cement facilities to receive 100% of their benchmarked allowances for free. This compares to just 75% when using 2009-11 data.

The 2014 values also place the cement sector extremely close to the highest tier (≥ 2.5) in the Commission's "targeted" option. If the risk factor grows and crosses the threshold by the 2016-

¹ Taken from Figure 13, page 172 of:

http://ec.europa.eu/clima/policies/ets/revision/docs/impact_assessment_en.pdf

2018 reference period, this would again give cement installations access to 100% of their benchmarked allowances for free. Under 2009-11 data cement facilities barely qualify for 80% of their benchmarked free allowances.

Table 1: Carbon leakage risk factors for the cement sector as published in Duncan's briefing note

	2009	2010	2011	2012	2013	2014	Source
Production (Mt)	209	192	192	170.5	157.5		Cembureau
Direct emissions (Mt CO ₂)	129.2	127.1	124.7	117.1	113.4	118.6	EUTL
Indirect emissions (Mt CO ₂)	11.5	10	10	9.4	8.7		Estimates based on 2015-2019 carbon leakage list
Total emissions (Mt CO ₂)	140.70	137.06	134.68	126.45	122.06		
Gross Value Added (M €)	7,420.10	6,619.30	6,430.20	5,455.00	4,834.10		Eurostat
Emissions intensity (Kg CO ₂ /€ GVA)	18.96	20.71	20.94	23.18	25.25		
Trade intensity (%)	6.28%	6.82%	5.87%	8.05%	9.76%	10.08%	Eurostat
Trade intensity * emissions intensity	1.19	1.41	1.23	1.87	2.46		

Part of the reason for this acute rise in the trade and emissions intensity of the cement sector, as Duncan's paper notes, is documented in Sandbag's recent report on the cement sector.² The cement sector is uniquely able to optimise its production to maximise the free allowances it receives, leading to windfall profits. The sector optimises production by increasing clinker exports, and also by increasing the clinker content in the cement it produces. Adding to the legacy of Phase 2 over-allocation, these excess allowances insulate the sector from the need to decarbonise its activities for more than a decade to come.

Ironically, the same rules which have allowed the cement sector to optimise its free allocation in in Phase 3 now stand to pay the sector a double dividend by improving the sector's eligibility for free allowances in Phase 4. Or viewed in reverse, the proposed Phase 4 rules risk exacerbating perverse incentives in the Phase 3 rules, by encouraging the sector to increase its emissions intensity still further. This is precisely the opposite behavioural outcome to that which the ETS is supposed to deliver.

Continuing to over-allocate an industry that has been persistently oversupplied with free allowances to date is just one reason why this development is worrying. A wider-level concern is that increased allocation to this sizeable sector risks starving all other sectors of free allocation by triggering a stronger "cross-sectoral correction factor". In the Commission proposal, 57% of Phase 4 allowances have been assigned to Member States for auction and a further 400 million assigned to an Innovation Fund. Industrial free allowances must stay within the remaining supply of 6.3 billion allowances – if total applications exceed that budget, all industrial facilities will face a uniform haircut. This should be a source of concern for all industrial sectors, who stand to lose some of their free allocation, but it should cause particular concern to those sectors who are most highly exposed to carbon leakage threats.

Even in scenarios where the correction factor is not triggered immediately in Phase 4, highly exposed sectors will be denied protection from carbon leakage if the cement sector takes up more free allowances. This is because new rules proposed by the Commission bank any unissued allowances from the free allowance budget as a buffer against the correction factor in future years. If the cement sector absorbs more allowance volumes, this buffer will be smaller, and the correction factor triggered earlier and more aggressively in periods after Phase 4. This

² <https://sandbag.org.uk/reports/final-carbon-fatcat/>

should also pose a concern to progressive environmental stakeholders, as any unissued allowances within the 6.3 billion budgeted for free allocation that are not issued, will remain off the market, bolstering the carbon price, and driving more emissions reductions.

2. How changes to cement sector affect the correction factor

We assess four different policy scenarios in this section, with the key parameters described in detail in Annex I. In all of these scenarios, we assume all other elements of the proposed legislation are held constant unless otherwise stated. In all scenarios, we also assume industrial activity under the ETS will grow by 1% each year starting from 2014. Finally, we adjust product benchmarks by 0.5%/year, in accordance with the assumptions presented in the UK-French non-paper.

2.1. The Commission's legislative proposal

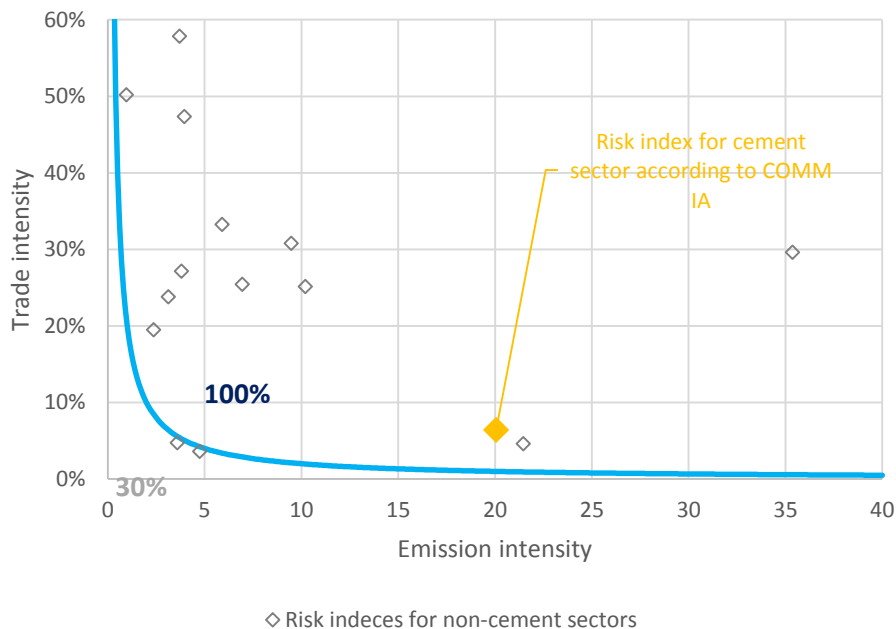
The first policy option Duncan presented to the shadow rapporteurs in his "skeleton options" paper was the Commission's current legislative proposal. Under that proposal:

- All sectors with a carbon risk indicator (emissions intensity times trade intensity) of 0.2 or higher would be considered as leakage exposed. This entitles them to apply for 100% of their benchmarked free allowances across Phase 4.
- Sectors falling below the 0.2 threshold can also continue to apply for free allowances, but at 30% of their benchmarked volume.

The Commission proposal defines an extremely wide section of industry as carbon leakage exposed. While the absolute number of sectors in this category has fallen substantially (to around 50) the volume of emissions represented by the remaining sectors has not been dramatically reduced. Our estimates suggest that the sectors eligible for 100% carbon leakage protection in the Commission proposal accounted for 90% of industrial emissions in 2014. This therefore still represents a huge volume of allowances being applied for.

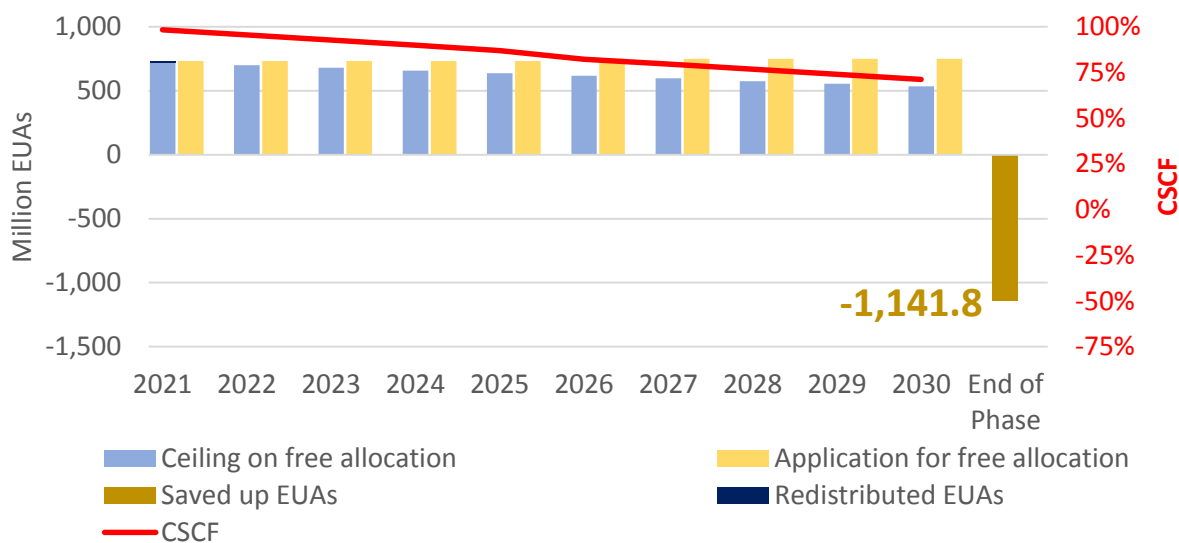
The cement changes highlighted by Mr Duncan do not materially affect calculations regarding whether the correction factor is triggered under the Commission's legislative proposal. This is because cement already safely falls above the carbon risk threshold of 0.2 even before taking account of any recent increases in its trade intensity and emissions intensity (see **Figure 2**).

Figure 2: Cement's carbon leakage risk index compared against the thresholds in the Commission proposal³
Other major sectors shown for reference.



In **Figure 3** we depict the results of our modelling exercise. A correction factor triggered right from the beginning of Phase 4 becoming increasingly aggressive across the period. Moreover, the correction to free allowances is massive, amounting to more than 1.1 billion allowances. This implies a haircut of more than 15% of the total application for free allowances over the entire period.

Figure 3: The Commission's legislative proposal assessed against the correction factor.
(Full parameters in Annex I.)



³ Adapted from note circulated by Ian Duncan on May 18 and from Figure 13, page 172 of http://ec.europa.eu/clima/policies/ets/revision/docs/impact_assessment_en.pdf.

A correction factor of this scale would represent a very serious blow to best performers in the most leakage exposed industries – in direct contradiction to the Council Conclusions. This shortfall is a direct function of giving out too many allowances to industries which are not in serious need of them. A more differentiated leakage list, which strips less exposed sectors of some of these allowances therefore seems sensible. We consider the first of these “tiered” options in the next subsection.

2.2. The ‘targeted’ carbon leakage approach from the Commission’s Impact Assessment

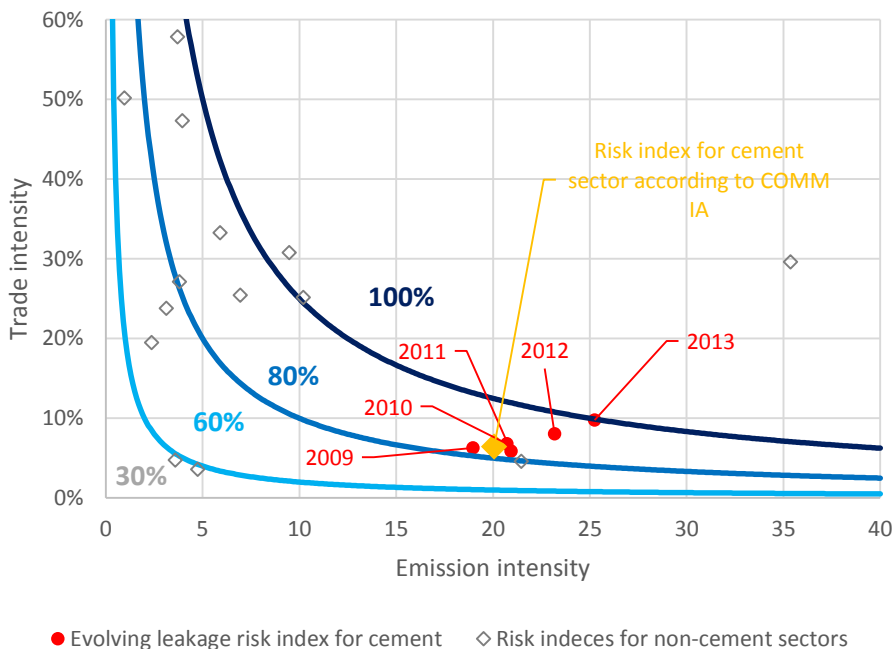
A second option put to the shadows by Ian Duncan, is the so-called ‘targeted approach’ taken from the Commission’s Impact Assessment.

Compared with the Commission’s legislative proposal, the “targeted option”, introduces two additional layers between the sectors that receive 30% of their benchmarked allowances, and the sectors that receive 100% of their benchmarked allowances. What is defined simply as “leakage exposed” in the Commission Proposal is subdivided into three different tiers. In summary:

- All sectors falling under the 0.2 threshold are considered weakly exposed and can apply for 30% of their benchmarked free allowances (the same as under the Commission proposal).
- Sectors with a risk indicator between 0.2 and 1.0 are defined as moderately exposed, entitling sectors in that category to apply for 60% of their benchmarked free allowances.
- Sectors between 1.0 and 2.5 are considered highly exposed and entitled to apply for 80% of their benchmarked free allowances, and finally
- Sector over 2.5 are considered very highly exposed, and can apply for 100% of their benchmarked free allowances.

As noted earlier, the Impact Assessment uses 2009-2011 data to assess where different industrial sectors fall between these thresholds, whereas the cement sector in particular has since moved some distance from these values. In Figure 4 below we see how these developments affect the protections cement receives.

Figure 4: Cement’s carbon leakage risk index compared against the thresholds in the ‘targeted approach’ from the Impact Assessment.⁴ Other major sectors shown for reference.

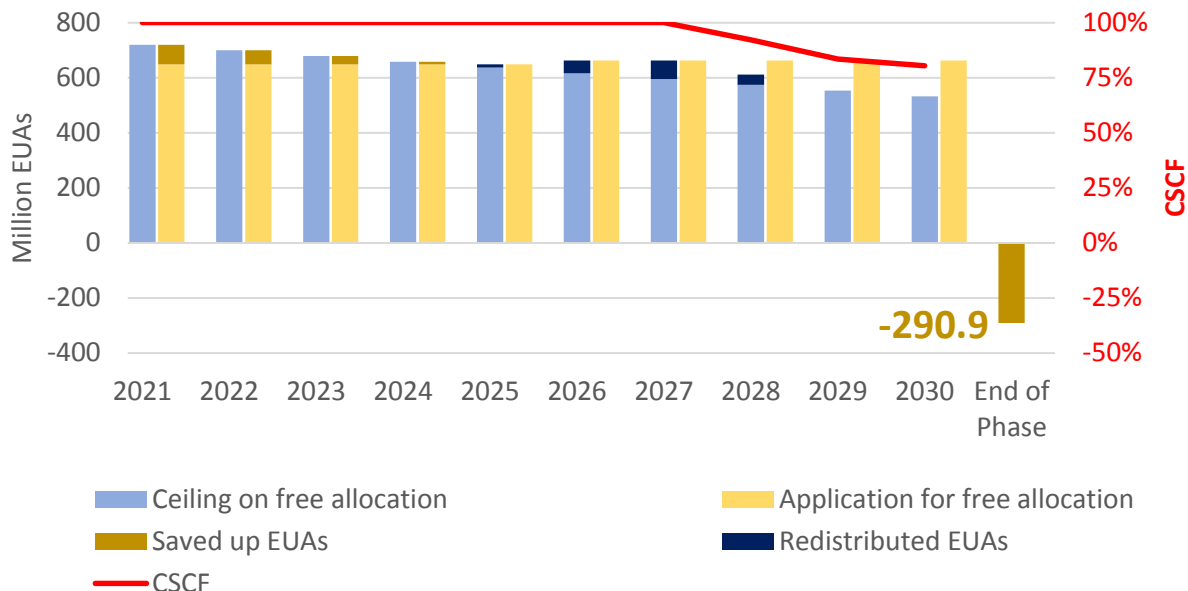


We can observe that the relatively widely spaced thresholds in this policy option are relatively robust against small changes in trade and emissions intensity. Even the doubling of cement’s risk factor between 2009 and 2014 does not immediately place cement into a new category of leakage protections.

However, what seems clear is that if the recent trends continue and the emissions and trade intensity of the cement sector grow even just a little further, the sector would become eligible for significantly greater carbon leakage protections across Phase 4. Indeed, if these parameters were enshrined in law, being within arm’s reach of these additional carbon leakage protections might further incentivise artificial increases in trade and emissions intensity which have already been encouraged by the Phase 3 allocation rules. In either event it seems wise to evaluate how this proposal would fare against the correction factor if the cement industry broke through to the top threshold entitling it to 100% of its benchmarked free allowances. We do this in Figure 5.

⁴ Adapted from note circulated by Ian Duncan on May 18 and from Figure 13, page 172 of: http://ec.europa.eu/clima/policies/ets/revision/docs/impact_assessment_en.pdf.

Figure 5: The Commission’s tiered ‘targeted approach’ assessed against the correction factor.
(Full parameters in Annex I.)



Despite creating two intervening stages of protection before sectors receive the 100% free allocation, the ‘targeted approach’ still fails to avert a cross sectoral correction factor. As we model in Figure 5, this comes into effect from 2028 onward, removing nearly 291 million allowances, representing just over 4% of industries’ total application for the duration of Phase 4.

Even if the cement sector ultimately fails to break through the 2.5 threshold, the Commission proposal would still see a correction factor triggered from 2030, removing 78 million allowances, representing just over 1% of industries’ total application for Phase 4.⁵

While this is a significant step forward from the Commission’s legislative proposal, this still leaves a lot to be desired in terms of protecting best performers in the most exposed sectors from “undue costs leading to carbon leakage”. Furthermore, because there is a shortage of free allowances, there is no space to manoeuvre to improve upon the way allowances in the Phase 4 cap are assigned.

⁵ We attribute these shortfalls overwhelmingly to the 0.5% p.a. benchmark evolution rate assumed in our modelling. We take the 0.5% value from the UK-French non-paper, but is also the default setting used by several analysts. If a 1% p.a. benchmark evolution rate was applied, there would be no shortfall in Phase 4 under this system of leakage protection.

2.3. The UK-French tiering proposal

The third policy option on carbon leakage explored in Ian Duncan's "skeleton options" paper is the UK/French tiering proposal as presented in their joint non-paper.⁶ Taking a lead from the Commission's 'targeted approach described above, this proposal introduces a 4-tiered approach, recognising more distinctions between sectors' risk exposure.

The UK/French proposal seeks to design its thresholds to confer more carbon allowance on highly exposed sectors and less on weakly exposed sectors:

- For the lowest risk category falling below the same 0.2 threshold, the non-paper permits applications for 30% of benchmarked free allowances at the start of Phase 4, declining to 0% in 2027. This averages at 9% across the period, considerably less than in the Commission proposal and the 'targeted approach'.
- For sectors with a risk indicator between 0.2 and 0.9, installations can apply for 50% of their benchmarked free allowances. This is well short of the 100% these sectors would receive under the Commission proposal, but is also marginally less than the 60% they would receive under the 'targeted approach' in the Impact Assessment.
- Sectors with a risk indicator between 0.9 and 1.6 can apply for 75% of their benchmarked free allowances. Again, less than the 100% they'd receive under the Commission proposal, and less than 80% most would receive under the 'targeted approach'.
- However, sectors with a risk indicator above 1.6 are entitled to apply for 100% of their allowances for free. The proposal creates a large category which pays out 100%

The UK/French proposal, therefore, confers less free allowances than the Commission's legislative proposal to almost all sectors that fall below a risk factor of 1.6. The non-paper explicitly mentions that one of the main reasons for reducing the eligibility for allowances in this way is to avoid the triggering of a cross-sectoral correction factor. However, representatives of the UK and France have also been explicit on several occasions about another objective: seeking to optimise the design of their tiering proposal to issue the maximum volume of free allowances available while avoiding that correction factor.

As one of the authors of this briefing warned in a recent ENVI shadows hearing⁷, there is a danger that the UK/French proposal is over-optimised against the free allowance budget, and has not designed-in a sufficiently large buffer to protect against the possibility of a correction factor. This puts the most highly exposed best-performers at risk.

Before accounting for the recent changes in the cement sector's risk factor as identified by the rapporteur, the modelling exercise conducted for this briefing finds that the UK/French position does, in fact, marginally manage to avoid the correction factor, leaving just 62 million allowances unissued of the 6.3 billion available (just under 1%).⁸

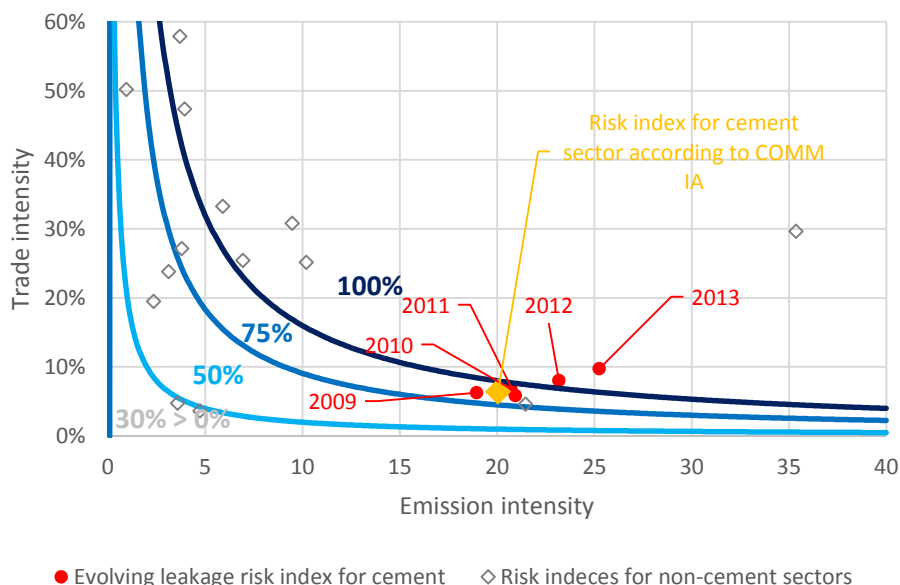
⁶ <http://carbon-pulse.com/wp-content/uploads/2016/03/Implementation-of-Tiered-Free-Allocation-in-Phase-IV-of-EU-ETS-a-joint-n....pdf>

⁷ Presentation to ENVI ETS shadows hearing on April 26th 2016 (on behalf of Sandbag)

⁸ As throughout this briefing, this assumes that industry grows at 1% per year from current activity levels and that benchmarks improve at 1% per year.

However, unlike the Commission’s binary legislative proposal and the ‘targeted approach’ described previously, the tiered thresholds in the UK/French proposal make it acutely sensitive to the movement of the cement sector. The risk factor for cement published in the UK/French proposal is 1.27 placing it in the second highest carbon leakage category. This means it is expected to access 75% of its benchmarked free allowances.

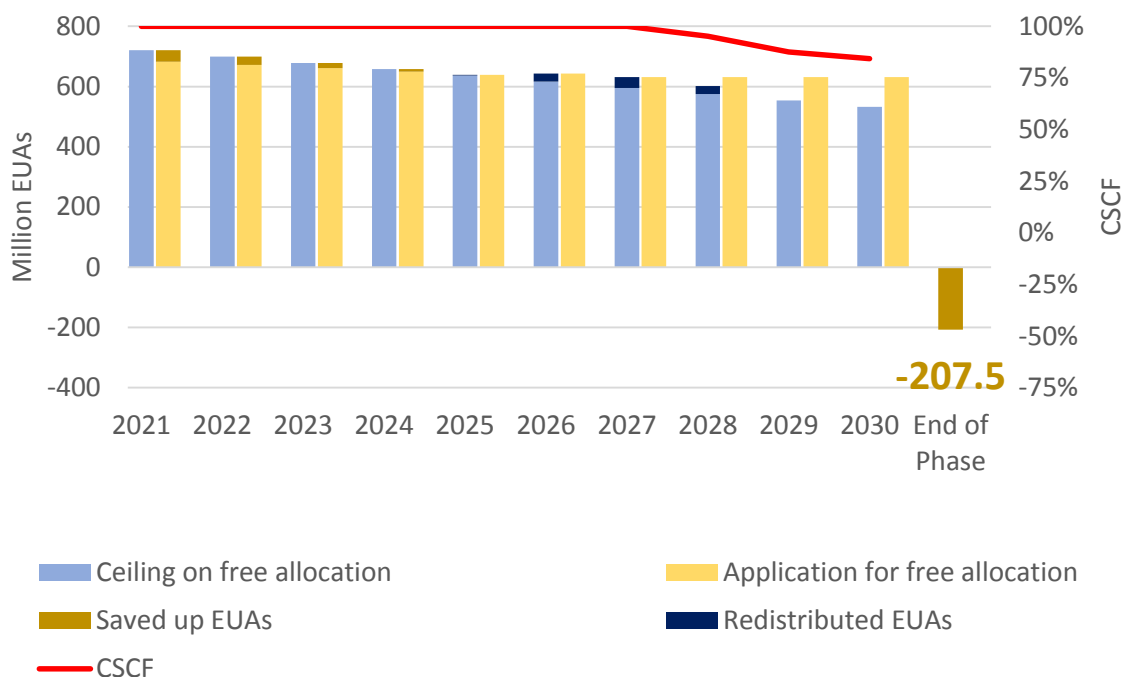
Figure 6: **Cement’s carbon leakage risk index compared against the thresholds in the UK-French non-paper⁹**
Other major sectors shown for reference.



If we use more recent historical data as provided by the ETS rapporteur, we find that the cement sector’s carbon risk factor has broken through to the top carbon leakage category as early as 2012, and has only grown since then, reaching 2.46 in 2014. According to our modelling exercise, this new development sees the UK/French proposal triggering a correction factor in the last 3 years of Phase 4. This leads to a haircut of 208 million tonnes to industry, representing a 3.2% cut against the total allowances applied for over the period.

⁹ Adapted from note circulated by Ian Duncan on May 18 and from tiering parameters proposed by the UK-French non-paper (p. 5). <http://carbon-pulse.com/wp-content/uploads/2016/03/Implementation-of-Tiered-Free-Allocation-in-Phase-IV-of-EU-ETS-a-joint-n....pdf>

Figure 7: The UK/French tiering proposal assessed against the correction factor. (Full parameters in Annex I)



This in our view, remains an unacceptably deep cut for genuinely exposed best performers. The UK/French proposal “sails too close to the wind” of the correction factor and cannot accommodate any margin for error in its assumptions and models. The rapporteur and shadows would be advised to choose parameters that err more on the side of caution, and keep some allowances in reserve against contingencies like the movement of the cement sector. One such proposal is explored in the next subsection. In our recommendations we also investigate ways the unwarranted movement of sectors into higher risk-categories might be more carefully monitored.

2.4. The Federley tiering proposal – with a high ambition variation

In the parallel process undertaken by ITRE, Fredrick Federley recently published his draft ETS revision opinion for that committee. That document contained a set of carbon leakage parameters taken directly from the ‘targeted approach’ in the Commission’s Impact Assessment (as described in subsection 2.2), but with one important exception: Mr Federley removed all free allowance entitlements to sectors in the bottom “low risk” category. These are the same sectors falling below the 0.2 threshold which consistently represent the least-compensated sectors across all of the scenarios explored above.

Here we will examine this single component of Federley’s draft report, independent of his other choices regarding Phase 4 design (Innovation Fund, New Entrants Reserve etc.). For now, we will assume all other elements are held constant as in the Commission’s legislative proposal.

Removing all allowances to the least exposed sectors turns out to be one of the most powerful measures to design a carbon leakage system that avoids the cross-sectoral correction factor. So

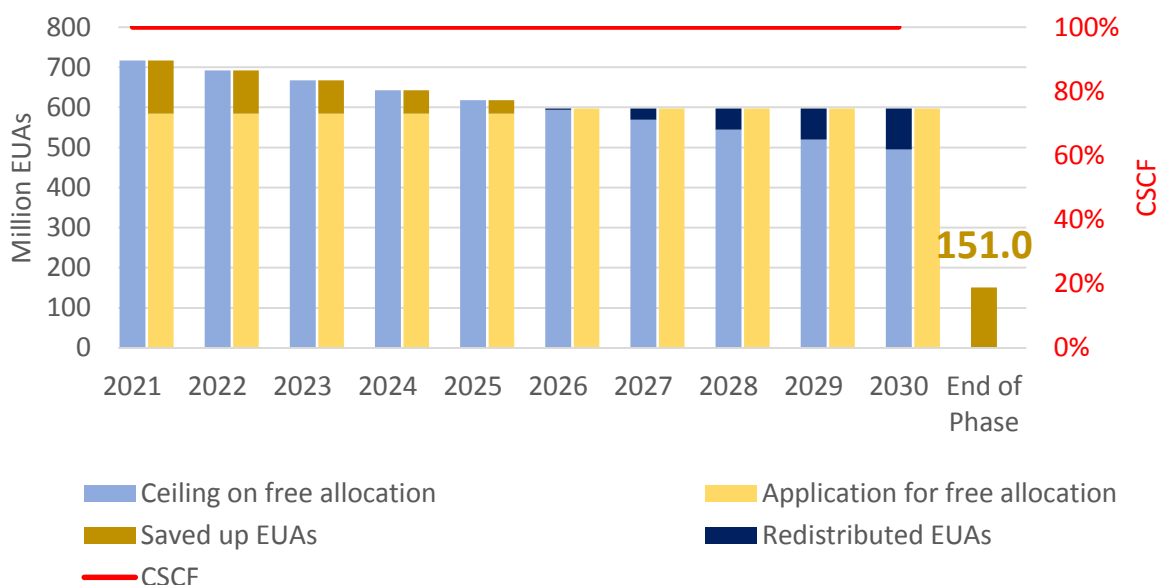
effective is this design that under our modelling parameters it builds a reserve of 359 million allowances by the end of Phase 4 – allowances that can then be used as a buffer against the correction factor in future phases. This assumes that growing trade and emissions intensity pushes the cement sector above the 2.5 threshold, allowing it to apply for 100% of its benchmarked free allowances. If the cement sector remains just within the second tier and only receives 80% of its allowances for free, the buffer of allowances grows to 572 million by the end of the period.

Now that we have identified a scenario where the correction factor is very safely avoided, we can even begin to consider alternative options for the allowances thus accumulated. The ITRE rapporteur elected to use the “wobble room” created by a more parsimonious carbon leakage system to channel more allowances into the New Entrants Reserve and to enlarge the innovation fund. There are other possibilities, however, that bear more directly on the environmental ambition of the EU ETS and of the European Union.

One option would be to consider cancelling some or all of this buffer of allowances as part of the ratchet and review process initiated under the Paris agreement. A clear indication of the scale of the allowances unissued for Phase 4 would be apparent just before the middle of the period, and a decision then made about whether to retire them.

Alternatively, these carbon leakage parameters would allow the EU to adopt a stronger trajectory for the ETS cap with minimal risk of triggering a correction factor that might harm the most leakage exposed facilities. The ENVI rapporteur has presented a 2.6% LRF as one of the policy options explored in his “skeleton options” paper. In Figure 8 we model how the Federley carbon leakage parameters would fare against a Phase 4 cap which had this alternative trajectory (with all other parameters held stable as in the Commission’s legislative proposal).

Figure 8: A high ambition scenario with Federley-style tiering assessed against the correction factor. (Full parameters in Annex I.)



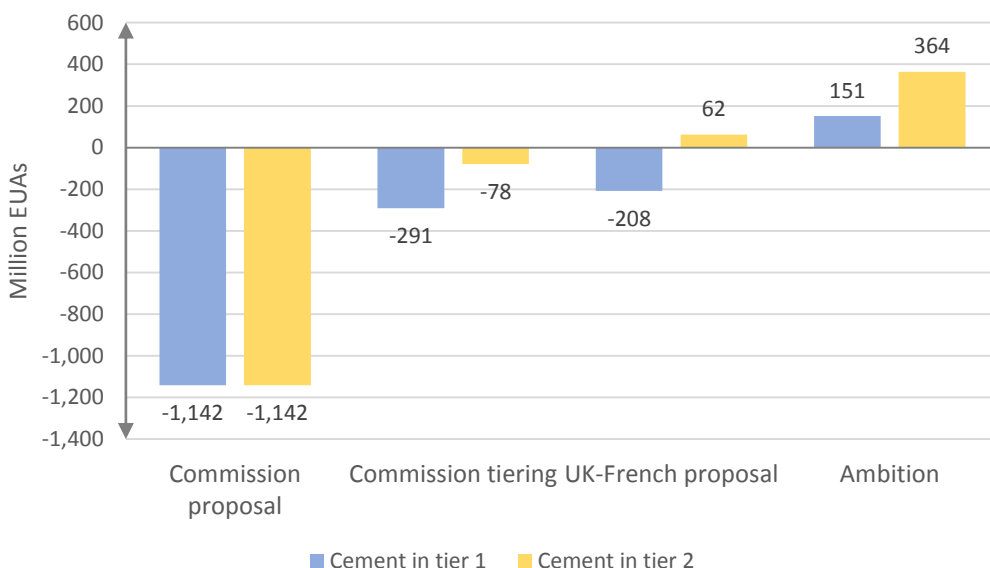
Even with a 2.6% Linear Reduction Factor and the cement sector in the uppermost carbon leakage category, the Federley tiering design will still retain 151 million allowances as a safety

margin against the correction factor, according to our models. If cement stays in the second leakage category that buffer grows further to more than 364 million allowances. A more targeted carbon leakage design can therefore act as a gateway to higher EU ambition.

2.5. Overview

The four policy options presented in the sequence outlined above present progressive steps on a ladder away from an aggressive correction factor. The Commission proposal potentially exposes industry to a very extreme correction factor, the ‘targeted option’ a significantly milder one, the UK/French proposal marginally milder again, and the Federley proposal manages to sidestep a correction factor so completely as to comfortably assign allowances to more constructive environmental purposes. In every proposal, the risk of a correction factor is heightened if the trade and emissions intensity of the cement sector increases further.

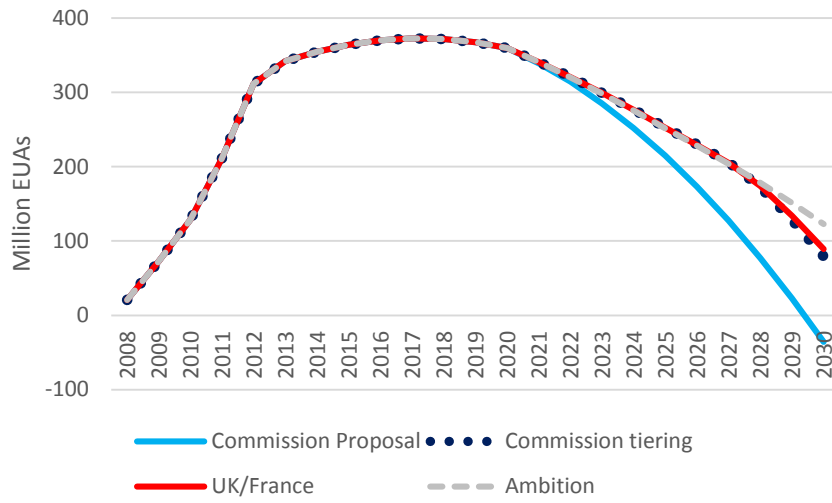
Figure 9: Buffers/shortfalls yielded by the leakage systems discussed in this paper.



Another key question to ask is how these different proposals will affect the surplus free allowances that have accumulated in the cement sector to date. Interestingly, the sector will fare worst under the Commission proposal. Because the cement sector is consistently captured under the most generous carbon leakage categorisations, the most important factor effecting its free allocation is the correction factor. The correction factor is most aggressive in the Commission proposal.

Note however, that, as Figure 10 shows, none of the policy options including the Commission proposal see the sector running out of surplus allowances before 2030. This means that, in aggregate, the sector will face no net costs until then for their direct emissions – beyond the very low price of carbon offsets purchased. Evidently, the new carbon leakage parameters are not sufficient of themselves to provide the cement sector with strong incentives to decarbonise in Phase 4. In our recommendations we introduce one idea which might prevent the cement sector and other industrial sectors from receiving higher carbon leakage protections than are actually warranted.

Figure 10: Cement sector (NACE 23.51) surplus EUAs under the leakage systems discussed in this paper.



3. Recommendations

The ENVI draft report should support carbon leakage thresholds and free allocation percentages that are as aggressively targeted as the ITRE draft report because:

- Sectors are not equally exposed to carbon leakage, and the simple binary classification in the Commission is too crude. A 4-tiered system is a balanced step towards acknowledging these differences without adding too much complexity.
- As designed in the Commission proposal, a binary system will provide free allocation to most industries that is well in excess of their requirements. Over-allocation should, of course, be avoided and the October 2014 Council Conclusions specifically state that "the consideration to [...] avoid windfall profits will be taken into account".¹⁰
- A significant proportion of manufacturing sectors can expect to face negligible exposure to carbon leakage and should not automatically receive 30% of their benchmarked allowances for free.
- A more targeted free allocation system that does not waste allowances on less exposed sectors better ensures that sufficient allowances will be available for the most highly exposed sectors. It achieves this by avoiding the cross-sectoral correction factor. Again, this is consistent with the October 2014 Council Conclusions, which specify that "the most efficient installations in these sectors should not face undue costs leading to carbon leakage".¹¹
- Tiering helps avoid the correction factor not only in in Phase 4, but also potentially in Phase 5. The new design of the correction factor under the Commission's legislative proposal allows unissued free allowances to accumulate as a buffer against the correction factor in future years.
- Most importantly, our modelling demonstrates that a targeted free allocation system can provide ample protection for the most exposed sectors, while allowing for greater ambition in the Phase 4 cap and tighter overall supply. This would help to step up EU ambition in the wake of the Paris agreement.

The ENVI committee should advise that the carbon leakage protections in Phase 4 should continue to be revised on a 5-yearly basis because:

- The proposed ten-year system risks locking cement into a very high carbon leakage exposure category as a reward for increasing its trade intensity and emissions intensity, which in turn was driven by perverse incentives during Phase 3. The Phase 3 rules are likely to have artificially bolstered the trade intensity and emissions intensity of the cement sector.
- Even if a more responsive free allocation system is introduced at the start of Phase 4 that ends the perverse incentives from Phase 3, the cement sector will still be able to access a higher percentage of its benchmarked free allowances for the whole decade.
- At the very least, the carbon leakage thresholds could remain fixed, but a new data gathering exercise should be conducted before the middle of the phase, which re-evaluates where sectors fall within each leakage risk category and what protections they

¹⁰ See Paragraph 2.4 https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf

¹¹ See Paragraph 2.4 https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf

are correspondingly entitled to. It should be noted that a new data gathering exercise is already due to take place before the middle of the period to inform the benchmarks used for the second half of Phase 4.

- A five-year review of the carbon leakage rules allows the EU to react to developments in the international stock-take, ratchet and review process initiated by the Paris Agreement. If Europe's international partners adopt equivalent measures, fewer allowances will be necessary to provide carbon leakage protections. This in turn would free up more allowances for auction, for the Innovation Funds, for retirement under a stronger cap, or for other climate-positive goals.

The ENVI committee should propose that, new emissions data should not be taken into account for any sectors that have increased their emissions intensity relative to the last period when it was assessed because:

- The new benchmark rules proposed by the Commission give a clear signal of the direction of travel in which emissions intensity should be moving for manufacturing sectors. The benchmarking rules and the rules determining carbon leakage protection should be coherent and complementary. Industries policed by the EU ETS should not be rewarded for growing their emissions intensity over time.
- There are few solutions that can correct for the recent trends in the cement sector without adversely affecting other sectors. Raising the threshold for the uppermost tier in the Commission's 'targeted' option, for example, might unduly exclude some genuinely exposed sectors from the carbon leakage protections they genuinely need.
- In Table 2 we calculate the risk index for cement allowing for full flexibility in trade intensity, but keeping emission intensity at the approximate value described on page 172 of the Commission's Impact Assessment – the most authoritative and recent source on this topic that is publicly available. The data shows clearly that, if defined in this way, the risk index would not break through the top threshold (2.5) in the 'targeted approach' – although it would exceed the top threshold (1.6) under the parameters of the UK-French non-paper.

Table 2: Evolution of the cement sector's index for carbon leakage risk if rising emission intensity were not rewarded.

Data underlying tier placement	Formula	2009	2010	2011	2012	2013
Emission intensity (Duncan note)	A	18.96	20.71	20.94	23.18	25.25
Trade intensity (Duncan note)	B	6.28%	6.82%	5.87%	8.05%	9.76%
Risk index (Duncan note)	A*B	1.19	1.41	1.23	1.87	2.46
Emission intensity (Imp. Assm.)	C	20.05	20.05	20.05	20.05	20.05
Risk index (alternative)	B*C	1.26	1.37	1.18	1.61	1.96

4. Conclusion

In summary, the rapporteur and shadows should be attuned to potential changes in the data for industrial sectors which might affect the carbon leakage thresholds they feel are appropriate. That being said, they should not allow the carbon leakage parameters to be held hostage by these changes. This is especially true in cases where emissions intensity has increased, or where carbon leakage risk factors may have been artificially inflated by perverse incentives under the Phase 3 free allocation rules.

Instead, the rapporteur and shadows should seek to futureproof the Phase 4 carbon leakage rules against potential changes in the underlying data. They can do this by ignoring any upward changes in emissions intensity, which the ETS should not be rewarding. They can also do this by reviewing the carbon leakage rules, or at least the data used against those rules, midway through the period. Above all, they should pursue a targeted carbon leakage system, which focuses allocation on the most exposed sectors, and avoids squandering it on windfall profits to the least exposed.

A targeted system will not only ensure that best performers in highly exposed sectors are not short-changed by a cross-sectoral correction factor. It also creates opportunities to re-assign carbon allowances for other, more environmentally constructive, purposes. Above all, it creates opportunities to step up European climate ambition via the EU ETS, by making a stronger Linear Reduction Factor and a tighter overall supply possible. A targeted leakage system in the EU ETS is therefore an important measure to enable the “at least” in Europe’s target to cut emissions by 40% vs 1990 levels, and/or to implement the ambition ratchet initiated by the Paris Agreement.

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Futureproof is a research and public-affairs consultancy addressing long-term, catastrophic and existential threats. We are climate change specialists with a core expertise in carbon budgets (UNFCCC, EU and UK), carbon markets and carbon pricing.

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5. Annex I

Scenarios →	Commission Proposal	Commission tiering	UK/French tiering	Ambition
Parameters ↓				
Auctioning share	57%	57%	57%	57%
Economic growth	+1.0%	+1.0%	+1.0%	+1.0%
Yearly benchmark adjustment	-0.5%	-0.5%	-0.5%	-0.5%
LRF	-2.20%	-2.20%	-2.20%	-2.60%
Tier 1	100% if risk index ≥ 0.2	For risk index ≥ 2.5: 100%	For risk index ≥ 1.6: 100%	For risk index ≥ 2.5: 100%
Tier 2		For risk index 1.0-2.5: 80%	For risk index 0.9-1.6: 75%	For risk index 1.0-2.5: 80%
Tier 3		For risk index 0.2-1.0: 60%	For risk index 0.2-0.9: 50%	For risk index 0.2-1.0: 60%
Tier 4		30% if risk index < 0.2	For risk index < 0.2: 30%	For risk index < 0.2: 30% to 0% by 2027



Climate Action Network (CAN) Europe is Europe's largest coalition working on climate and energy issues with over 130 member organisations in more than 30 European countries - representing over 44 million citizens.

CAN Europe calls for:

- Raising the EU's greenhouse gas targets in line with the Paris Agreement to limit temperature rise to 1.5 degrees;
- Permanently eliminating the large allowance surplus;
- Moving to 100% auctioning whilst ensuring, in the short-term, a focused tiered approach to carbon leakage ensuring that free allowances are not given to industries that do not face significant and proven competitiveness risks.
- Financing of international climate action and a just transition for workers

CAN Europe's detailed position on the ETS reform: http://bit.ly/CAN-Europe_ETS-Position