

Holcim Position Paper on Climate Change:

4. Practical Guidance for Performance Based Allocation in 2008 - 12

<p>Basic principle</p>	<p>With Performance Based Allocation (PBA) the absolute volume of allowances (A) is equal to a Performance Standard (PS) multiplied by a Production Volume (PV).</p> <p>The allocation is calculated in two steps: first an allocation to the sector: $A_{\text{sector}} = PS_{\text{sector}} * PV_{\text{sector}}$</p> <p>Followed by a distribution to all installations in the sector on equal terms pro rata production volume of each installation: $A_{\text{installation}} = A_{\text{sector}} * (PV_{\text{installation}} / PV_{\text{sector}})$</p>
<p>Three parameters</p>	<p>The practical implementation of PBA requires the definition and quantification of three parameters:</p> <ol style="list-style-type: none"> 1. The definition of the unit of performance standard (e.g. tonne CO₂ per tonne cement); 2. The quantification of the performance standard, possibly including regional or technological differentiation; 3. The production volume.
<p><i>The performance standard</i></p>	<p>The performance standard is by definition the CO₂ emission per unit of production of the end product of the respective activity, e.g. tonne CO₂ per tonne cement, tonne CO₂ per MWh electric power.</p>
<p><i>Quantification of the performance standard</i></p>	<p>Quantification of the performance standard can be done in different ways.</p> <hr/> <p>The current allocation to new entrants uses the CO₂ emission from Best Available Technology (BAT) as the performance standard. By definition, this is the lowest achievable emission. Allocation on this basis means the creation of tradable allowances is impossible. This could jeopardize the concept of emissions trading.</p> <hr/> <p>Emissions trading with BAT benchmarking is a de facto form of Command & Control. BAT should therefore not be used for allocation.</p> <hr/> <p>By far the best way to quantify the performance standard is to use the sector average specific emission in a reference period and apply to this an improvement percentage that takes into account the technical and economic potential to improve the sector average within the commitment period(s).</p> <hr/> <p>The performance standard could be regionally differentiated on</p>

	the basis of objective parameters.
The Production volume	<p>In the first allocation step, to the sector, the production volume is a forecast, based on historical trends, economy- and sector-growth, policy measures that influence product demand, and import and export. For example, major infrastructure works for increasing public transport and decreasing (emissions from) private transport would increase demand for electric power and concrete. This should therefore be considered in the forecast of cement and power production volumes.</p> <p>In the second allocation step, to installations in the sector, the production volume would, by preference, be based on historical production in a recent reference period plus production from new entrants. It should not be based on forecast per installation, to prevent speculation and ensure transparency.</p>
New Entrants, Closures, Plant rationalization	New entrants, closures and plant rationalizations are all treated equally: Upon closure, production volume falls to zero, as do issued allowances. With new entrants and relocation of production to another installation in the EU, the production volume in the formula is equal to the anticipated or design capacity and the initial allowances are calculated accordingly.
Application in the cement industry	In order to recognize and reward all the drivers which reduce fuel and process emissions in the cement industry, including the reduction of clinker content in cement, the Performance Standard must be based on cement-clinker and not on clinker, being only an intermediary product.
	<p>The cement-clinker performance standard consists of two parameters:</p> <ul style="list-style-type: none"> ▪ CO₂ efficiency of clinker production (tonne CO₂ per tonne clinker), for which considerable European harmonization is feasible. 880 kg CO₂ /tonne clinker would be a reasonable performance standard for 2008-12. ▪ The clinker to cement ratio (tonne clinker per tonne cement) requires differentiation based on the regional availability of clinker substitutes (slag, fly ash and pozzolans). Within the European Union, this value varies from ~0.65 to ~0.92. <p>As a result, the cement performance standard ranges from 570 to 810 kg CO₂ /ton cement, function of regional availability of clinker substitution materials.</p> <p>The cement-clinker volume is equal to the volume of clinker produced divided by the regional clinker to cement ratio.</p>

Further information on Holcim’s CO₂ objective and strategies can be found at: www.holcim.com/sustainable/ or by contacting Bruno Vanderborght at: bruno.vanderborght@holcim.com

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