How can EU legislation promote green cement?

Position paper on ESPR and CPR revision

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Introduction

ECOS, the Environmental Coalition on Standards, welcomes the Commission's proposals to review the Construction Products Regulation (CPR) and the extension of ecodesign policy to make sustainable products the norm under the Ecodesign for Sustainable Products Regulation (ESPR). Addressing the environmental impacts of products – and intermediates – with a substantial environmental footprint is crucial for achieving our climate ambition and the European Green Deal. The parallel and coherent revision of the CPR and ESPR offers a once- only opportunity to achieve a real green transition.

Cementitious materials make up more than half of all materials we consume today, and the production of cement is highly carbon and energy-intensive, accounting for 8% of global CO_2 emissions. And while the European cement industry has committed to reach net zero by 2050, actual progress is not sufficient. This is for several reasons:

- **Emissions by the cement industry are still increasing.** Of all energy-intensive sectors covered by the European Emission Trading System (ETS), cement is greatly underperforming in terms of decarbonisation. Looking at verified emissions over the last 10 years, the cement sector witnessed an increase of 4% in emissions since 2013. This stands in contrast to other sectors such as steel or aluminium, which achieved emissions cuts in the same period.[1]

- **European cement is still becoming more carbon-intensive.** The key polluting part of cement is clinker, making up more than 90% of the total cement footprint. Therefore, it is widely acknowledged that clinker substitution is the most effective lever for decarbonisation, as it

[1] EU Emissions Trading System (ETS) data viewer — European Environment Agency (europa.eu)

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tackles emissions at source. A wide range of solutions for clinker substitution is available today, with the potential to cut the industry's footprint in half at near-zero costs (IPCCC, 2022). Nonetheless, European cements continue to contain high shares of clinkers, whereas the rest of the world has caught up with – and surpassed – Europe when it comes to the production and use of low-carbon cement.[2]

- **European cement standards are a barrier for low carbon solutions.** European cement standards, as set by the industry in standardisation bodies, are recipe-based. Such an approach locks in the use of high levels of clinker in European cement, thereby preventing low-carbon cement from entering the market. Recent years witnessed a general reluctance to reform standards, with only some minor and incremental steps taken in allowing low-carbon solutions on the market. This is problematic, especially since there is a broad and long-standing plea from various stakeholders (e.g., academia, green groups, and international organisations) to adopt performance-based cement standards, as it has been repeatedly shown that such approach allows for the rapid uptake of low carbon solutions and innovations on the market.[3]

At ECOS, we are convinced that the cement – and by extension concrete – sector will continue to be a vital part of the European economy. Therefore, there is an urgent need for an ambitious and comprehensive European policy framework on cement, allowing it to finally drive down emissions of this energy-intensive industry. The successful conclusion of an environmentally ambitious ESPR and CPR offers the opportunity to achieve this. The remainder of this paper will discuss what success on cement looks like.

Strong internal market for cement

A strong and well-functioning European internal market for cement is key to the rapid decarbonisation of the cement industry. Low carbon cement, however, is today still confronted with an unlevel playing field for market participation. To obtain the European Technical Assessment marking, a precondition for market entrance, cement must comply with the European recipe-based cement standards. However, as these prescribe high levels of clinker content, low carbon cement are forced to use the alternative 'ETA route[4]'. This is a time-consuming and, therefore, costly endeavour, hampering innovation and rapid market uptake. Furthermore, even upon ETA approval, national concrete standards require – in the best case[5] – additional procedures for the use of cement that are not covered by the European cement standards, creating yet another layer of red tape and costs for low carbon cement. Obviously, this is only

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2 Marmier, A., Decarbonisation options for the cement industry, EUR 31378 EN, Publications Office of the European Union, Luxembourg, 2023, ISBN 978-92-76-61599-6, doi:10.2760/174037, JRC131246.

3 United Nations Environment Programme (2017). Eco-efficient Cement: Potential Economically Viable Solutions for a Low-CO2 Cement-based Materials Industry. https://wedocs.unep.org/20.500.11822/25281

4 The ETA route refers to the process where companies are forced to start up a process before the European Organisation for Technical Approvals as their products are not covered by the scope of existing standards. While it has been designed to be used as a backup measure for new innovations, it has become the default route for the marketing of new low carbon cement, illustrating the outdated nature of today's prescriptive cement standards.

5 Referring to the fact that national annexes to the concrete standard (EN 206) do not exclude the use of certain low carbon constituents altogether.

economically viable for big projects, explaining why low carbon cement only makes up a tiny fraction of the market today.

To create a strong internal market for cement, including low carbon solutions, the European legislators should prioritise:

- **The development of a performance-based standard for common cement**. A shift from today's recipe-based cement standards to a performance-based approach would finally create the much-needed level playing-field for all types of cement placed on the European market, including low-carbon solutions. This will accelerate market uptake of the existing solutions; promote further material innovation, and finally align cement standards with the performance-based approach of the CPR, which is supposed to *"provide rules on how to express product's performance in relation to their essential characteristics"* (art. 1(a), new CPR proposal). The **urgent activation of the CPR acquis subgroup on cement is essential** if we want to move forward. As existing cement standards have multiple issues of non-compliance with the performance-based rationale of the new CPR, sufficient time and resources should be invested in its follow-up to ensure an efficient and speedy process.

- **Ensure that the installation phase is covered by the scope of the CPR**. As cement is an intermediate product for concrete, create a level playing field for low carbon cement at the concrete level is crucial. Including the installation phase under the scope of the CPR is imperative to achieve this, so that those elements of national concrete standards dealing with the placement and acceptance of low carbon cement on the market can be harmonised. For obvious reasons, elements related to construction works should remain outside the scope as this is the prerogative of Member States.

Create a strong internal market for construction products has always been the ambition of the European legislators. The CPR has been instrumental in this, even though many barriers still exist to the market entrance of low carbon cement. **The agreement of an ambitious CPR, backed up by an efficient CPR acquis process on cement, will be essential in creating a level-playing field for low carbon solutions, contributing significantly to their market uptake and the decarbonisation of the cement, concrete and construction sector at large.**

Strong ecodesign requirements

Ecodesign requirements -i.e. minimum environmental requirements at the (intermediate) product level-, are a successful and the most effective tool to save energy and resources, while also reducing CO_2 emissions. Ecodesign requirements are vital for the decarbonisation of cement. Furthermore, through its Ecodesign directive (soon-to-be ESPR), the EU has a strong and proven track record of pushing the worst-performing products – from an environmental point of view – from the market. At present, the European Commission's proposal on ESPR seeks to expand the scope of the directive to all environmentally impactful products, including (intermediate) construction products such as steel and aluminium. Cement, however, risks being offered preferential treatment as different actors deem the CPR

to be the appropriate framework for setting ecodesign requirements. As the CPR has no proven track record of decarbonisation – in contrast to the ESPR – this risks jeopardising the decarbonisation of the cement industry, and with it the construction sector at large.

To secure rapid and evidence-based eco-design requirements for cement, European legislators should ensure that:

- **Cement is not offered a preferential regime for ecodesign requirements.** A common misconception is that cement should receive a different treatment than other high-energy intermediate construction products because it is very different from them. The reality, however, shows that many other high-energy intermediate construction products share very similar characteristics to cement. As is the case for cement, most are exclusively manufactured for construction (e.g., construction chemicals) or even concrete (e.g., reinforced steel). Moreover, key intermediates that will be covered by the ESPR area are also almost exclusively B2B products, not dissociable from the end product (e.g., chemicals). Therefore, grandfathering cement risks jeopardising the decarbonisation of Europe's most consumed construction product, as well as creating further complexity in the construction sector, especially for end-users.[6] At a time when leading global cement markets are adopting ambitious environmental legislation; with cement (and its underlying technologies) being increasingly traded, preferential treatment for cement risks jeopardising the competitiveness of the European cement industry.

- **Ecodesign requirements are mandatory and developed in a transparent and evidence-based manner.** To maximise the impact of ecodesign requirements, it is vital that ecodesign requirements are mandatory and developed in a transparent policy framework, building upon scientific insights. Applied to cement, this means that standards are not the appropriate framework to achieve this. Standards are developed in industry-dominated bodies, with little to no political and public oversight. As a result, there is a substantial risk that ecodesign requirements will be less ambitious than what is needed from a societal and scientific point of view, tailored to the decarbonisation plans of the industry actors present in standardisation bodies. Moreover, from a legal point of view, standards are much more complex than delegated acts (DAs) for setting mandatory ecodesign requirements. While standards do have legal status – upon citation in the OJEU – they are developed in private bodies and have to be purchased. DAs, on the other hand, are publicly accessible and therefore also much more impactful.

- **Cement decarbonisation is fast-tracked.** As cement production accounts for 8% of verified ETS emissions, with a footprint still increasing, it is key for legislators to pick the fastest legislative track to not deplete our remaining carbon budget. From this point of view, the ESPR framework is particularly promising as it is underpinned by a proven methodology that successfully prioritised carbon-intensive products in the past. The CPR acquis review process, on the other hand, has listed cement only as sixth in the priority list – sitting after various product groups with little to no environmental footprint (e.g., post-tensioning kits). Furthermore, the development of standards easily takes up several years.

[6] For example, all key constituents of concrete will be regulated by a similar set of ecodesign requirements (e.g. reinforced steel, chemical additives), with the exception of cement.

Conclusion

There is an urgent need for the development of strong ecodesign requirements for cement. Considering the above criteria, **we are convinced that the ESPR offers a stronger framework to deliver on all of them. Cement should not receive preferential treatment to other energy and carbon-intensive intermediate products. This would risk jeopardising the much-needed decarbonisation of the industry and construction sector at large.**

The competition for developing clean tech is on, and it includes cement. If Europe fails to provide ambitious legislation requiring low carbon cement, then their development and deployment will take place outside of Europe. Unfortunately, this is already happening. Europe needs to adopt an approach using ambitious environmental legislation, supported by performance-based standards. In this way, Europe will meet its climate objectives, become the global standards-setter, and would turn the European internal market into one of the most innovative and attractive markets for low carbon cement and concrete, as such gearing up the European cement industry for an era of low carbon construction.