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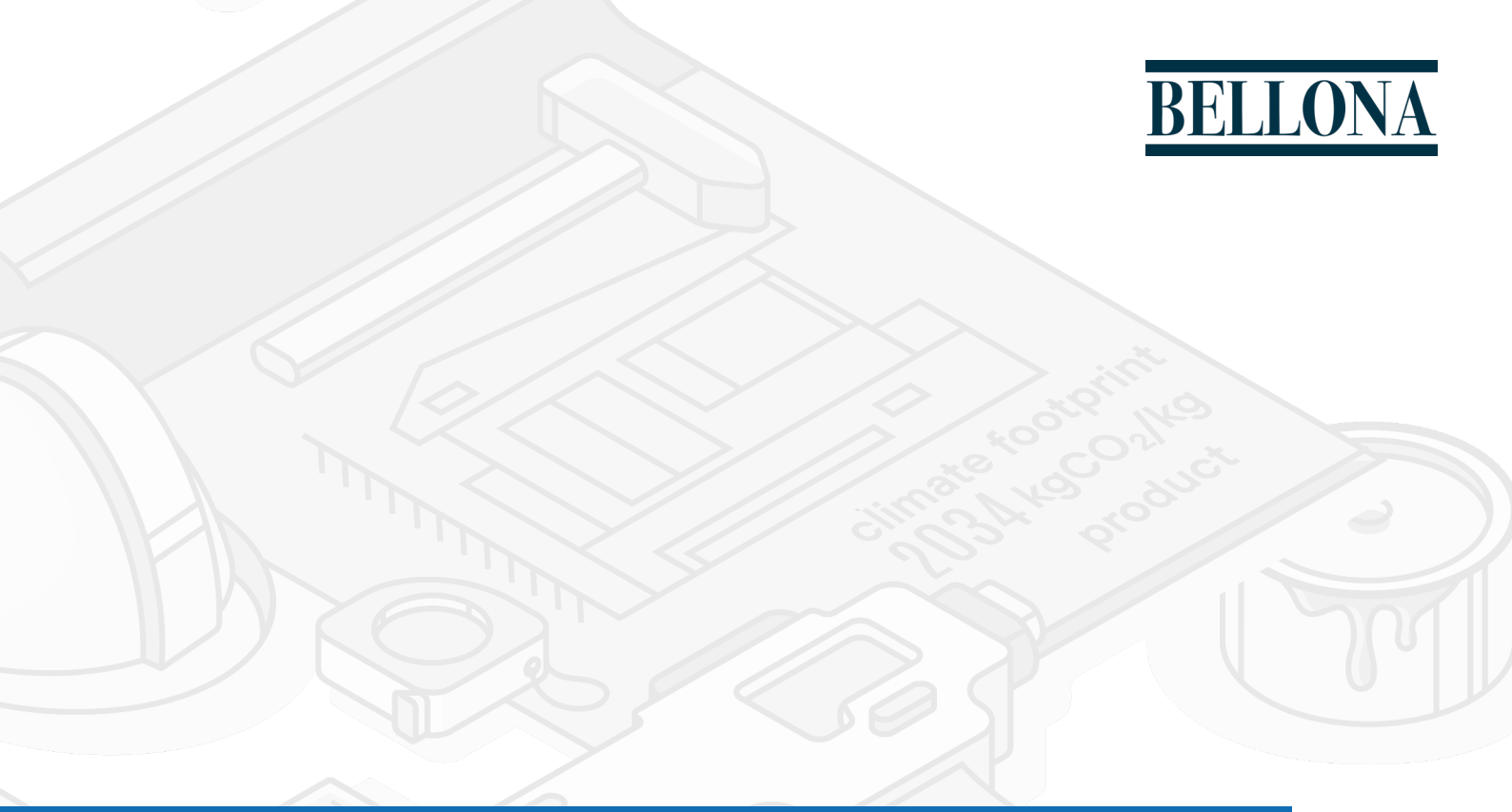


INCENTIVISING LOW CARBON PRODUCTS IN THE SUSTAINABLE PRODUCTS INITIATIVE

BELLONA POLICY PAPER

JULY 2022

INCENTIVISING LOW-CARBON PRODUCTS IN THE SUSTAINABLE PRODUCTS INITIATIVE

The EU's attempt to encourage circular practices and promote a sustainable form of resource handling was established in the EcoDesign Directive: a largely successful effort. Studies comparing emissions in 2020 with and without the directive's provisions show a comparative decrease in GHG emissions by 170 Mt of CO_{2eq}[i] (based on the additional energy efficiency resulting from the Directive). This is a reduction of 10% compared to a "business as usual" case. The newly proposed Sustainable Products Initiative[ii] (SPI) is an expansion of the EcoDesign Directive and has the potential to also deliver positive climate impacts.

The SPI outlines the need for product design to offer durability, repairability and recyclability. It seeks to expand the sectors covered beyond energy-related products. The SPI acknowledges and attempts to tackle existing market failures by including externalities and establishing sustainability principles. We welcome the framework established in the SPI, and the potential it holds for key sectors such as heavy industry (like cement, steel and chemicals).

Since the turn of the century, global demand for cement and steel has more than doubled, and the production of plastics – a key group of chemical sector products – has increased by more than 90%[iii]. These three sectors account for more than 6Gt of CO_2 emissions per year through energy use and direct emissions[iv].

To realise the full potential of the SPI, detailed accounting of emissions and quantifying (to whatever extent possible) externalities such as climate impact are required.

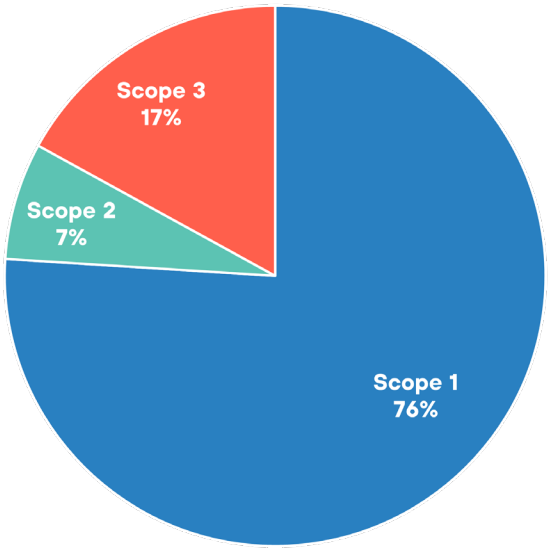
This can be a challenge, especially within a circular economy as actions such as recycling do not translate directly into emission reductions and climate impacts from such sustainable practices are difficult to measure.

Despite these challenges and complexity, trying to quantify true emissions of products and ensure that they are reported transparently is a step in the right direction. This would not only inform customers to make an environmentally conscious choice, but also enable industries to create markets and pursue ambitious climate strategies. Wherever possible, the SPI must offer stricter regulation and increased transparency, mirroring the true climate impacts of products and introduce incentives for sustainability related aspects into a wide range of product related assessment methods (e.g., such as emissions calculation methodologies).

Include Scope 3 emissions into the calculation to avoid distorted choices

Assessments that do not take into consideration the full value chain of a production of a given product need to be avoided, since they can result in misleadingly favourable outcomes. The broad approach of the SPI needs to be complemented with a holistic accounting of emissions. Including scope 3 emissions allows for better climate impact assessment of products over their entire lifecycle.

Scope 3 emissions account for indirect emissions that occur in the value chain, including upstream and downstream emissions. Impacts of intermediate products such as steel, cement and chemicals are more accurately reflected with the inclusion of scope 3 emissions. This is crucial in ensuring true emissions are reflected in the products put onto the market (e.g., scope 3 emissions of the chemical sector value chain can amount to a significant portion of the total climate impact of the industry[v]).



Italcementi cement GHG emission sources , by scope (2019)

Figure 1: Italcementi cement GHG emissions sources 2019, WBCSD20[vi]

Importing clinker, a crucial intermediate in cement production, results in significant upstream emissions as clinker froms the largest component of the carbon footprint of the cement production process; more than half of total emissions. If these clinker emissions are not considered, labelling of produced concrete as low carbon would be misleading: it not only reflects an improper calculation of climate impact, but also generates unfair market competitiveness.

Scope 1 and 2 emissions are sufficient to capture most of the climate impact for intermediate products such as steel and cement, where the production phase for these sectors emit the majority of the emissions in their lifecycle. However, including scope 3 emissions like the transportation of raw materials would account the climate impact of final products in detail and provide a more complete picture of their climate impact. In the UK alone, the emissions from transportation of raw materials and final concrete is 7.9 kg CO_2/ton[vii], for an average distance (for raw materials and intermediate product) of around 45km.

Upstream scope 3 emissions should be included when they arise from emissions from the energy supply chain, as has already been proposed for low carbon hydrogen standards. This should include emissions from natural gas production and transport, including energy used in liquefaction and shipping of LNG. These should be included because they are potentially significant and excluding them risks distorting choices by categorising as low carbon processes and products which are not truly low carbon when the full picture is considered.

In other sectors such as chemical industry, scope 3 can account for downstream emissions which can be significant end-of-life emissions either during use or disposal. They can be avoided if there is a clear and binding commitment to avoid emissions from disposal. This should include emissions from incineration at end of life, for example of plastics. Global warming potential of plastics in landfills is 253 gCO_2/kg, whereas for incineration the potential can go up to 4605 gCO_2/kg depending on a variety of choices[viii].

Excluding these scope 3 emissions would form an incomplete accounting of true emissions associated with the products leading to distortion of choices. Appropriate accounting would mean scope 1 and 2 emissions should always be included in full. For scope 3 emissions a materiality threshold could be introduced, where scope 3 emissions are included if a category of emissions is potentially above, for example, 5% of the total emissions for the product. This would reduce administrative load by only covering scope 3 emissions when they are significant.

Emissions related to waste and waste handling should not be ignored

The SPI should account for emissions present in the specific iteration of the product reuse. Historic emissions should not be counted, as CO_2 has already been added to the atmosphere.This is important for avoiding double counting of emissions, and thus for overstating savings from reducing emissions.

For example, a concrete block being reused cannot account for previous process emissions, since this would overstate its climate footprint. By considering only incremental emissions of each possible reuse, the accounting is appropriate, reflecting true climate impacts.

In addition to preventing double counting of emissions and emission reductions, the SPI must account for the carbon embedded in a product or waste which might be otherwise missed in reuse cycles. For example, 'waste' gases from steel recycling cannot be considered carbon neutral due to their carbon content[1]. Lack of such a consideration would be detrimental as these gases can be used to make fuels, claiming a smaller carbon footprint than its true value[2].

This can also be applied to end-of-life emissions of these products. The SPI also proposes penalties for disposing products that can be otherwise recycled or reused. Accounting for the emissions resulting from various disposal methods (e.g., incineration in term of plastics) ensures that the full life cycle impact of a given product is considered.

All emissions from manufacturing materials themselves should be included, external benefits should be captured by other mechanisms. For example, in setting tighter energy efficiency standards for buildings through the energy performance directive for buildings[x] and provide energy performance certificates. Similarly, the benefit of recycling should be captured then on subsequent reuse or recycling. Consistent with this, benefits of meeting standards should accrue to the person taking the action, for example recycling.

[1] Unless the carbon contained in the 'waste' is permanently stored away from the atmosphere, as defined in the Directive 2009/31/EC on CO_2 storage

[2] For example, waste gases can be used to produce recycled carbon fuels that are included into the Directive Directive 2018/2001/EU on renewable energy.

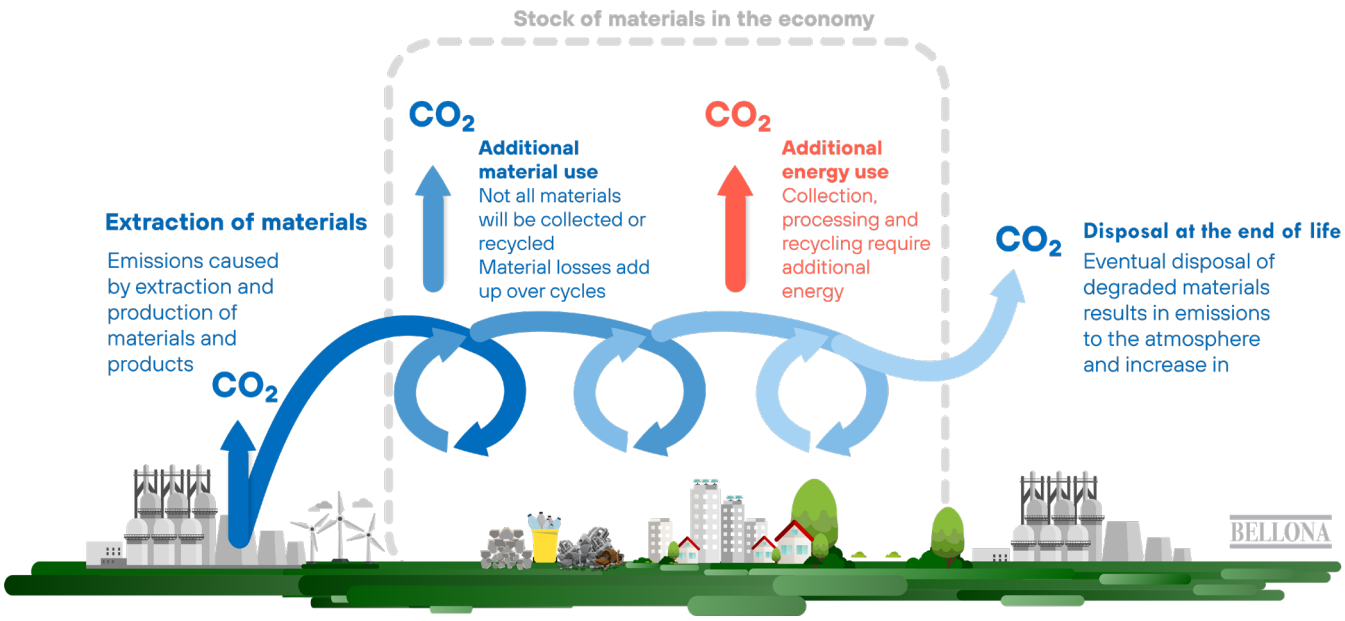


Figure 2: Emissions in lifecycle of a product with multiple reuse cycles, Bellona[ix]

Ensure robust monitoring and verification to avoid false claims

Thorough emissions reporting and verification is crucial for the success of the SPI. There are currently 457 voluntary environmental labels worldwide[xi]. They are often poorly defined, not comparable and unable to fully measure and assess environmental and climate impacts of various products. In the EU, over 200 labels are active[xii]. This wide variety of standards and labels makes it difficult for consumers, businesses and potential investors, and public administrations to identify and trust environmental claims. In this context, it is crucial that the digital product passport of the SPI, which aims to store and share all relevant information along a product's lifecycle, is done so via a transparent methodology that can illustrate the full climate impact.

The emission reductions claimed by a manufacturer need to be verified by an independent expert. To avoid any false green claims, the SPI should be backed with physical metrics. When a 'green claim' has been made and the product is sold at a premium, substantial proof should be provided by the producer. In the EU, green claims will be regulated by a new regulation[xiii] requiring companies to substantiate claims they make about the environmental footprint of their products/services by using standard methods for quantifying them.

Ambitious stringency should be built into mandatory standards. There is not enough time until 2050 to allow for less stringent standards, especially for emissions intensive products. Voluntary standards should be only allowed if they are tied to clear and stringent standards covering all products put onto the market. Robust monitoring and verification are important in ensuring these targets are met.

This can be supported through clear sustainability metrics for all stakeholders. The EU has developed a Product Environmental Footprint methodology which will be used to define the impact of products on the EU level and contribute to the Sustainable Products Initiative under the Circular Economy Action Plan[xiv, xv]. This can extend beyond transparent emissions accounting, to other criteria around biodiversity and land use.

Highlight all measures that ensure true decarbonisation

In 2018, the total waste generated by the EU was 2,337 million tonnes[xv], of which construction held the largest share of 35.9%. With annual waste generation expected to increase by 70% by 2050, the climate impact of the current "take-make-use-dispose" model needs to be evaluated more strictly.

One of the many ways in which the SPI tackles this is by promoting resource efficiency. Heavy industry could benefit from more specific support of material efficiency as such measures are shown to contribute to indirect emission reductions.

Material efficiency measures include rethinking design to increase product lifespan to better manufacturing processes to reduce yield losses, to name but a few. These are important as circularity in some sectors, such as steel, is high: 56% of EU steel is made from scrap (pre- and post-consumer scrap)[xvi].

For cement and chemicals too, highlighting material efficiency brings focus to specific design measures that would contribute to significant emissions reduction. These measures need to go hand in hand with other direct decarbonisation measures within the heavy industry.

As material efficiency does not address emissions at the source of production (e.g., cement or steel plant), additional emissions reduction measures are needed to complement material efficiency measures, such as for example carbon capture and storage or DRI for steel production using green or low carbon hydrogen.

Nuanced alternatives need to be promoted as well, such as finding sustainable alternatives for clinker in cement production. A variety of solutions that are industry specific need to be identified and encouraged.

Promote low carbon products to ensure competitiveness

The Sustainable Product Initiative has the opportunity to incentivise low carbon products. Within the heavy industry, products with emissions significantly lower than conventionally produced products need to be rewarded.

For example, steel produced through scrap-electric arc furnace results in emissions of 0.4 tCO_2/tsteel. Incentivising such process is a significant reduction from conventional furnaces where emissions are around 1.9 tCO_2/t steel[xvii].

Some of these products still face market barriers for large-scale deployment, placing them in a relative disadvantageous competitive position to existing carbon intensive products.

One major reason for the barrier is economic risks for first movers into a low carbon product market, losing out to foreign emission intensive products due to competitive pricing. By supporting other policy tools, such as a CBAM[xviii] to address carbon leakage from the industry, the competitiveness of local businesses can be protected. This, however, needs to be coupled with the obligatory and simultaneous phase-out of free allocations and the CO_2 compensation mechanism in the EU ETS[xix] to avoid double support and skewed benefits. Additionally, public and private funding should define a low climate impact as a key condition for financing projects and products in various industries.

Providing such subsidies to remove market barriers for low carbon products could result in over-reliance on such forms of state aid. To ensure wide market design integration, first the creation of lead markets are needed, to help with the transition. This can be facilitated through the setting of gold standards for low carbon products, ensuring a classification that differentiates between incremental emissions reductions and truly low carbon processes. These processes, coupled with short to medium term commercial opportunities created through public private partnerships, could help create niche markets for first movers of decarbonised products.

Policy Recommendations

Detailed accounting of emissions and quantifying (to whatever extent possible) externalities such as climate impact are required:

- The climate impacts need to be clearly visible for products that are on the market to increase the transparency for consumers and incentivise a shift to a low-carbon economy.
- Holistic and fair accounting needs to include scope 3 emissions if they form a significant part of the total climate footprint of a product (e.g., more than 5% of total emissions of the product).
- Emissions 'avoided' by using cement, steel and chemicals should not be included into the GHG accounting methodology.
- The resulting calculation (of a GHG quantification methodology) should show the specific impact of a product, for example, in x tCO2/t product.
- Greenhouse gas accounting needs to reflect the true and full climate impact of a product, by accounting for carbon embedded in products and waste and by avoiding double counting in reuse cycles.
- Facilitate frameworks for robust monitoring, reporting and verifying within the heavy industry to have emissions that reflect the true climate externalities of the product. This should form the base for credits and penalties for climate impacts.
- Varied emission reduction measures within the steel, cement and chemical industries through support and incentives for low carbon products are needed. This should be coupled with legislative and financial support for such first movers, ensuring their competitiveness in the wider market.

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BELLONA EUROPA

CONTACT

Aravind Dhakshinamoorty
Policy Assistant

Phone

Mobile: +91 994 372 2283

Online

Email: aravind@bellona.org
Website: www.bellona.org

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