

Royal Institute of British Architects

Department for Business, Energy and Industrial Strategy:

Towards a market for low emissions industrial products: call for evidence

February 2022

The Royal Institute of British Architects is a global professional membership body driving excellence in architecture. We serve our members and society in order to deliver better buildings and places, stronger communities and a sustainable environment. Being inclusive, ethical, environmentally aware and collaborative underpins all that we do.

The RIBA welcomes the opportunity to respond to the call for evidence on how the Government can move towards a market for low emissions products. On 29 June 2019 RIBA Council voted to join the global declaration of an environment and climate emergency, two days after the UK Government passed a law to require the UK to end its contribution to global warming by 2050 by bringing all greenhouse gas emissions to net zero.

The climate emergency demands urgent action and leadership by the Government, architects and the wider construction industry. The RIBA welcomes the Government's aim to create a market of low emissions products. However, we believe that there is a need for greater ambition on behalf of the Government if we are to significantly improve the performance and reduce the environmental impacts of the built environment.

The RIBA recommends that the Government:

- Introduce demand-side policies within the construction sector in the coming years; product standards and public procurement could be extremely effective at driving down emissions in the sector.
- Set embodied carbon targets to ensure the full carbon impact of a building is measured.
- Include Scope 3 emissions from the outset of the policy.
- Ensure that architects can secure adequate Professional Indemnity Insurance (PII) as new "low emissions" products come to market and the use of Modern Methods of Construction (MMC) is more commonplace.
- Ensures building safety remains at the forefront of the construction sector and any new or revised materials prioritise safety.

1. *What type of organisation do you represent? Please select one:

- a) Private sector business / for profit organisation: large
- b) Private sector business / for profit organisation: SME
- c) Trade association or other industry body
- d) Academic institution
- e) Non-Government Organisation (NGO)
- f) Private individual
- g) Other

c) Trade association or other industry body

2. *Do you represent or hold expertise on a specific industrial sector? If yes, which sector?

The Royal Institute of British Architects (RIBA) represents around 50,000 architects across the world. Architects have a key role to play in the decarbonisation of the construction sector.

3. *Do you / your organisation manufacture or purchase industrial products as defined on page 9 of this document? Please select one:

- a) Manufacturer of industrial products
- b) Buyer of industrial products
- c) Both buyer and manufacturer
- d) Neither buyer nor manufacturer

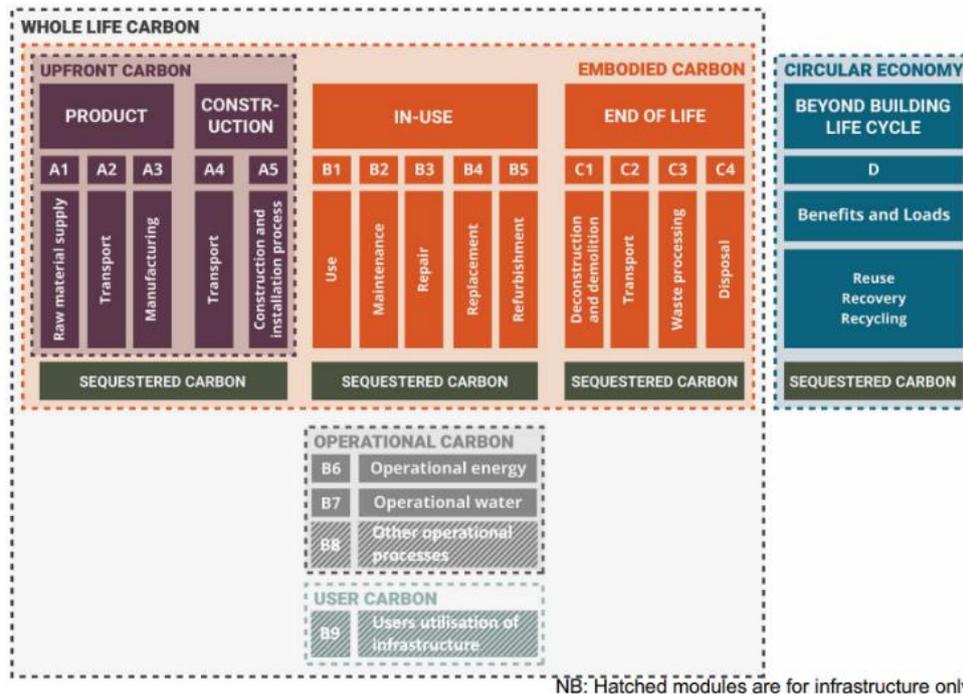
d) Neither buyer nor manufacturer

CHAPTER 1

6. *Do you agree with the approach to the emissions scope set out in Chapter 1?

The RIBA does not agree with the approach set out in Chapter 1. While we understand the urgent need to incentivise emissions reductions throughout the supply chain, excluding some Scope 3 upstream and downstream emissions would omit large proportions of emissions from many building materials.

Including Scope 3 emissions would also be in line with British Standard BS EN 15804 which covers the environmental performance of individual products and is aligned with international standards. Section 5.2 of BS EN 15804 outlines which products must report A1-A5 emissions (upstream Scope 3 material acquisition and pre-processing and Scope 1-2 production), and B1-B5 and C1-C4 emissions (downstream Scope 3 due to distribution, use, and end-of-life). See diagram below.



Source: LETI, RIBA, WCLN¹

It is important that in-use and end-of-life emissions are included to ensure a complete picture of the carbon impacts of a material is provided. For some materials, such as steel and concrete, production of these materials accounts for a large proportion of carbon emissions. But for other materials, such as timber, this becomes more complicated. Production emissions for timber products, which includes harvesting, drying and sawing are significant; although the carbon absorbed by the tree and stored (known as sequestration) within the material may be even greater. However, this carbon is typically re-released at the end-of-life due to combustion and/or decomposition. If this is not accounted for accurately and consistently it may mislead product buyers on the sustainability of the product.

6.1 Does your business have estimates (either at the business level or the product level) of the split of emissions falling into Scope 1, Scope 2 and Scope 3? If so, please provide them.

Around 10% of global energy-related greenhouse gas emissions are attributable to materials and products used in the construction and maintenance of buildings.

6.2 What do you see as the optimal scope of emissions to be included in the definition of low emissions products in order for labelling and standards policy to be both effective and workable? Could the exclusion of some Scope 3 emissions create any negative impacts?

As mentioned above, if Scope 3 emissions are ignored this could imply certain materials are more sustainable than they are in reality.

6.3 *Which, if any, Scope 3 emissions categories are essential for inclusion in the assessment for your sector/product(s)? Please specify why you think they should be included.

In-use and end-of-life should be included for Scope 3 emissions.

6.4 How should the emissions of 'value retained' products (see glossary) be evaluated to allow for comparison with new products?

Value retained products should be evaluated positively as the reuse, repair or refurbishment of products will play an important role in reaching net zero. However, it is crucial that these products are evaluated to ensure they are safe for reuse.

6.5 *Are there any limitations of an emissions-only approach to assessing climate impact that may affect your sector/product(s)? Please specify any additional metrics that you think should be included.

An emissions-only approach does not take into consideration wider climate impacts, such as the impacts of production on local biodiversity or water usage. It is important that any low-emissions products are not causing wider negative environmental impacts to in the process of reducing emissions.

7. *How do you think the level of emissions at which the definition of low emissions products is set should change over time?

As we move away from fossil fuels to electricity from renewable energy, products are likely to naturally become lower carbon than today. It is important to understand how products are performing today to ensure that new "low-emissions" versions are less carbon intensive than those currently.

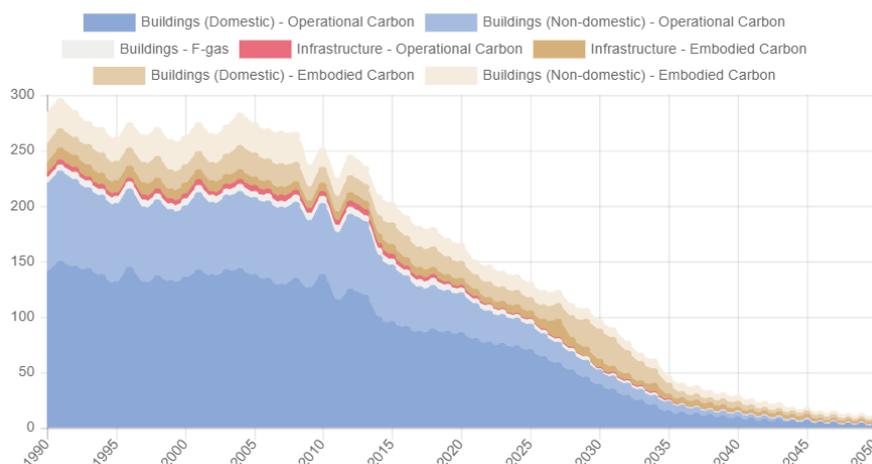
7.1 *Do you agree it should become more stringent over time?

The RIBA agrees that the definition of low emissions should become more stringent over time.

7.3 *Do you have any suggestions for how a trajectory of increasing stringency should be shaped for your sector and how regularly any definition would need to be revisited?

For the construction sector we suggest that the trajectory should be calculated based on a projected sector decarbonisation pathway. The UK Green Building Council's (UKGBC) Net Zero Whole Life Carbon Roadmap for the Built Environment demonstrates how the built environment can reach net zero by 2050.

Historic (1990-2018) built environment emissions (MtCO₂e), alongside projected emissions from the built environment (2018 through to 2050)



Source: UKGBCⁱⁱ

7.4 How far in advance would you like government to give notice of this trajectory?

The RIBA agrees with the position laid out in the call for evidence. Publishing levels in advance is vital to give assurance about the trajectory and allow businesses time to prepare; however, we understand that emission levels could become outdated quickly and the system must react to this.

It is important to note, however, that new buildings can take several years from the strategic definition (i.e. agreeing a new building the best means of achieving the client's requirements) to being handed over to the client. If the trajectory is changing frequently and often this may require different products or materials to be swapped in and out throughout the process. Assuming product manufacturers will adapt to trajectory changes this may not be problematic; but this relies on the market reacting quickly to changes.

7.5 Do you have a suggestion of what an ambitious but achievable level of emissions would look like for your sector/product(s) through the 2020s? This can be expressed as a benchmark of embodied emissions or as conditions (for example, that the benchmark needs to be reasonable, given that deep decarbonisation technologies will not be readily available yet).

When designing and constructing a building, how each material can perform the required function whilst using the least embodied carbon, should be considered. For example, a material may be low in embodied carbon; however, it may not provide adequate insulation to keep a building warm.

Therefore, the RIBA suggests taking a performance-based approach to low emissions materials. This means setting embodied carbon targets for buildings.

To help architects design within a climate conscious trajectory the RIBA has developed the [2030 Climate Challenge](#). The Challenge provides a stepped approach towards reaching net zero and sets a series of targets for practices to adopt to reduce operational energy, embodied carbon and potable water.

The embodied carbon performance targets that are set out in the 2030 Climate Challenge have been developed by the RIBA, in consultation with experts across the industry. The targets consider the latest recommendations from the Green Construction Board and are aligned with LETI, the Whole Life Carbon Network and other built environment professional bodies.

The RIBA 2030 Challenge embodied carbon targets are as follows:

RIBA 2030 Challenge	2025 targets	2030 targets
Non-domestic (new build offices)	< 970 kgCO ₂ e/m ²	< 750 kgCO ₂ e/m ²
Non-domestic (new build schools)	< 675 kgCO ₂ e/m ²	< 540 kgCO ₂ e/m ²
Domestic / residential	< 800 kgCO ₂ e/m ²	< 625 kgCO ₂ e/m ²

8. Do you agree with the approach of setting more stringent emissions levels as the basis for voluntary standards, vs lower-stringency mandatory standards?

Yes, the RIBA agrees with this principle assuming the mandatory standards are at an adequate level to ensure we are on track to reach net zero.

9. Do you agree that sector-level definitions are likely to be the most appropriate level of granularity for demand-side policies?

Sector-level definitions are likely to be the most appropriate for the construction sector as it will allow architects to compare how each material can perform the required function whilst using the least embodied carbon.

CHAPTER 2

13. Do you think that a voluntary product standard and/or product label would be sufficient to change buyers' behaviour? Why/why not?

The RIBA welcomes a voluntary product standard and/or label as a positive step for those interested in improving the sustainability of their asset. However, this is client dependent and for those looking to procure simply on the lowest cost – this may not be enough of an incentive.

14.6 Do you have other views on how the green credentials of a product could be given greater priority by buyers?

Setting embodied carbon targets for buildings would increase a buyer's interest in low carbon materials.

16.1 Are there other sectoral characteristics you think need to be considered?

The impact of action should also be considered. The built environment, for example, is responsible for approximately 38% of global energy related greenhouse gas emissions with around 10% attributable to materials and products used in the construction and maintenance of buildings. Therefore, addressing the built environment sector is integral to reaching net zero.

17.*Would your sector be a suitable target for new demand-side policy over the next 5- 10 years?

When submitting evidence please consider:

- How this might vary dependant on policy lever.
- Where in your supply chain new demand-side policy would have the greatest benefit (for example, an upstream product/process that accounts for most of the embodied emissions in end-consumer products, or at the point of transaction).
- Which product markets for your sector will require the greatest policy influence to shift procurement to low emissions industrial products.

The construction sector would be suitable for demand-side policies in the coming years. The following policies would be the most effective at working towards a low-emissions construction sector:

Voluntary product labelling or standards

A voluntary product standard and/or label would be a positive step for those interested in improving the sustainability of their product. However, uptake may be low, and reliant on an adopted procurement route. For those client's looking to procure simply on the lowest cost – this may not be enough of an incentive.

Mandatory product standards and regulations

Setting an upper limit on the associated emissions for industrial products would be useful for architects. This would stimulate growth in low-emission manufacturing of traditional materials and promote new

low carbon materials. Mandatory standards would also encourage the use of local materials, driving the built environment to source products from the UK where possible.

Mandatory product labelling

Displaying information about the products climate impact would make it easier for architects to compare different materials and products to specify in a project. When designing and constructing a building, how each material can perform the required function whilst using the least embodied carbon, should be considered - mandatory product labelling would make this process easier.

Public procurement

Effective public procurement prioritises good design outcomes and can maximise the social, environmental, and economic benefits of development. In the UK, the Government accounts for a quarter of the construction sector; therefore, the Government as a client, has a key role to play in promoting sustainable buildings. Setting embodied carbon targets through the public procurement process will increase the demand for low carbon materials – whilst demonstrating that the Government is a global leader in sustainable construction.

18. Could a ‘mandatory for UK products only’ approach be a reasonable first step in rolling out new mandatory standards or labelling policy?

The RIBA understands why the Government would focus on UK products as a first step in rolling out mandatory standards or labelling. However, should this result in increased costs of UK products this may motivate some buyers to procure international products. If the international products have a higher embodied carbon (due to the transportation required to get them to the UK) this may unintentionally drive-up UK emissions – the opposite intention of this policy.

CHAPTER 3

21. Does your sector already compile aggregated products emissions data?

The industry already uses Environmental Product Declarations (EPD). EPDs provides information about a product’s impact upon the environment, such as global warming potential, smog creation, ozone depletion and water pollution.

The European Standard for the generation of EPD for construction products, EN 15804, was published by the CEN Technical Committee for the sustainability of construction works (CEN TC350) in 2012.

EPDs are generated based on data obtained through Life Cycle Assessment (LCA). An LCA is performed using a peer reviewed Product Category Rules document (PCR) in line with EN 15804, ISO 14025, and other related international standards.

21.1 If so, who is responsible for compiling and sharing this data?

The RIBA is a member of the consortium of professional bodies, including RICS, BRE, CIOB, IStructE, and ICE, developing the [Built Environment Carbon Database](#) (BECD). The free-to-access software pulls together a swathe of industry carbon data in a single location and function as the main UK platform to store new carbon assessments and generate project-and product-level benchmarks (through EPDs). In return for benchmarking information and calculations users will need to upload project information.

A key driver behind the platform's development is inconsistency in the measurement and reporting of whole life carbon emissions and underlying data needed to benchmark construction performance and set targets. This is one of the biggest challenges for industry. The BECD demonstrates the industry's willingness and collaboration to improve on consistent embodied carbon reporting, key to prioritising low carbon materials and this could be further improved through Government support.

24.*What are your views on how the embodied emissions of imported industrial products should be reported?

The RIBA suggests the embodied emissions of imported industrial products should be reported on a consumption-basis. Taking a consumption-based approach captures direct and whole life cycle emissions of goods and services (including those from raw materials, manufacture, distribution, retail, and disposal). This approach allocates emissions to the consumers benefiting from those goods and services. Reporting emissions on a consumption-basis attributes responsibility to those driving the demand, rather than 'offshoring' emissions.

There is also a need for the Government to have a flexible approach, and potentially additional support, for new products gaining UKCA approval. This is important to ensure small, international product suppliers bring their products to the UK market.

25. What are your views on appointing a certification body?

The RIBA welcomes appointing a certification body.

CHAPTER 4

31. In your view, are there further environmental criteria or sustainable practices that public contracting bodies could consider in individual commercial processes? Please provide examples and explain how these could support a market for low emissions industrial products.

The Government should ensure that the buildings they fund, or commission, are providing value for taxpayer money and meeting adequate energy efficiency standards. Even when a building's design has energy efficiency at its heart, the promised energy efficiency standards are not always met.

Post Occupancy Evaluation (POE) is the only way of accurately measuring if a building is as energy efficient as anticipated. POE is the process of obtaining feedback on a building's performance in use after it has been built and occupied. It also allows for continuous improvement within the construction industry as it provides information on how a buildings design could be improved. POE provides invaluable feedback and lessons learnt that all involved can take forward into their organisations and to their next projects.

The Government should promote and endorse POE but also require POE as a condition for all publicly funded buildings and housebuilders receiving Help to Buy payments. This is essential for transparency of how public money is spent, but also provides data that can be shared and learnt from, allowing for continuous improvement on energy efficiency within the built environment. Verifying that low-emissions products are meeting the desired energy efficiency standards through POE is essential for the UK to reach its net zero target.

32.*When would demand-side policies ideally be introduced to best support decarbonisation of your sector or business? Please consider:

- How the delivery timeline might need to vary for each policy (e.g. introducing voluntary policies prior to mandatory ones, which voluntary policies would be most helpful in the short-term, when public procurement could be most supportive etc.).
- For manufacturers - the likely decarbonisation pathway for your business and the wider domestic and international sector. For buyers - when you would like to begin purchasing low emissions products.
- Whether you would like to see early rollout of any demand-side policies in some sectors, followed by broader adoption across industry.
- Whether the early roll-out of demand-side policies would be a suitable method to incentivise improving energy and/or resource efficiency measures for your sector or business. Please specify which policies.

The RIBA recommends introducing labelling (starting with voluntary labelling) as soon as possible. This would reward those who are already producing low carbon materials to promote their products. It would also help those within the construction industry looking to specify low carbon materials to find these products.

Effective public procurement prioritises good design outcomes and can maximise the social, environmental, and economic benefits of development. The Government should set embodied carbon targets for buildings through the public procurement process. This will increase the demand for low carbon materials – whilst demonstrating that the Government is a global leader in sustainable construction. This should be done as soon as possible.

33. What other factors should government take into account when designing demand side policies? Please submit evidence on:

- Any other schemes or policies which affect your sector that could interact with demand-side policies (e.g. ecodesign and energy information, producer responsibility schemes and deposit return scheme for drinks containers).
- How the introduction of demand-side policies may impact your business.
- Suggested mitigations against any risks that you foresee.

There is an urgent need to address legacy issues within the construction, legal and insurance sectors which have made it harder and more expensive, if not impossible, to secure adequate Professional Indemnity Insurance (PII) for all practices. This is a particular issue for some materials such as engineered timber structures and buildings using Modern Methods of Construction (MMC). As materials or products transition to low emissions it is vital that architects can acquire adequate PII on their projects using these products.

Finally, the safety of our buildings must remain at the forefront of the construction sector. It is vital that any new or revised products maintain high levels of safety for building users.

¹ LETI, RIBA, WLCN, *Improving Consistency in Whole Life Carbon Assessment and Reporting*, https://www.leti.london/_files/ugd/252d09_879cb72cebea4587aa860b05e187a32a.pdf

² UKGBC, *Net zero whole life carbon roadmap for the built environment*, <https://www.ukgbc.org/ukgbc-work/net-zero-whole-life-roadmap-for-the-built-environment/>