IRISH GREEN BUILDING COUNCIL'S SUBMISSION ON BIOECONOMY ACTION PLAN 2023-2025

ABOUT THE IRISH GREEN BUILDING COUNCIL

The Irish Green Building Council (IGBC) provides leadership for a sustainable built environment. IGBC is a registered charity with over 300 corporate members drawn from all parts of the value chain, from occupiers, design professionals, contractors, suppliers, academics and public authorities and affiliated with a global network of 70 national councils within the World Green Building Council. This allows us to create workable solutions and tools to deliver transformative change towards a sustainable built environment. The Irish Green Building Council also is the national partner of the Renovate Europe campaign in Ireland.

This submission focuses on the role of the bioeconomy in transitioning to a "totally decarbonised, circular, resource efficient built environment" by 2050[1]. It is based on the feedback received from our members during a series of workshops organised in 2021 and 2022 as part of the #BuildingLife project. The objective of #BuildingLife was to develop a roadmap to decarbonise Ireland's built environment across its whole life cycle. A copy of the roadmap, Building a Zero Carbon Ireland is available at https://www.igbc.ie/wp-content/uploads/2022/10/Building-Zero-Carbon-Ireland.pdf. The workshops were attended by developers, contractors, building professionals, investors, researchers, and local authorities.

It is also informed by the IGBC's involvement in a number of projects to address embodied carbon emissions in the built environment, including the EPA funded CircularLife and the EU funded LifeLevel(s) projects, as well as the EPD Ireland programme.

The **construction and built environment account for 37% of Ireland's carbon emissions**, the same as agriculture. This is made up of about 23% operational emissions, with the remaining **14% being accounted for by embodied carbon**, resulting from quarrying, transporting, and manufacturing building materials, in addition to constructing buildings and infrastructure.

A recent carbon modelling report commissioned by the IGBC to a group of researchers in UCD shows that **Ireland cannot reach its 2030 climate targets without addressing embodied carbon emissions**. **Encouraging a greater use of low-carbon construction processes and materials, including biobased and reused materials, is key in addressing these embodied emissions**.

Furthermore, **Ireland with a large agricultural sector has a strategic interest to identify, encourage, and develop local low carbon biobased solutions from agriculture and forestry**.

Q1. ARE YOU SATISFIED THE OUTLINED PILLARS REPRESENT THE STRUCTURE OF THE IRISH BIOECONOMY?

The IGBC is satisfied that the seven new pillars represent the structure of the Irish bioeconomy. However, the "governance pillar" will be critical as this sectoral approach could lead to key actions being developed in silos. Developing a sustainable bioeconomy in Ireland requires a holistic approach, and the governance pillar should not only "address key cross-cutting issues", but it should also ensure that the whole strategy is coherent, as well as developed and implemented in a transparent and inclusive manner.

[1] As per vision developed by key stakeholders when developing the Building a Zero Carbon Ireland - Roadmap https://www.igbc.ie/wp-content/uploads/2022/10/Building-Zero-Carbon-Ireland.pdf

Q2. ARE THERE SPECIFIC KEY PERFORMANCE INDICATORS AND/OR TARGETS THE BIOECONOMY SHOULD BE SETTING OUT TO ACHIEVE TO MEASURE ITS IMPLEMENTATION?

As highlighted in our Building a Zero Carbon Ireland – Roadmap, reducing the carbon intensity of new construction and renovation per m² by at least 60% in this decade is key to reach our 2030 Climate targets. Although this reduction will be achieved initially by leaner design (i.e., using commonly available materials), this is unlikely to be sufficient and Ireland will need to transition to alternative low carbon materials, i.e., more low carbon biobased and circular materials.

There are at least two targets/ indicators that should be set to support the development of biobased construction materials in construction.

A first step is to ensure that Green Public Procurement (GPP) becomes the new norm for all construction projects and that carbon emissions targets per m² are gradually introduced and made stricter for publicly funded project. When it comes to climate action, the public sector must lead by example, and as Ireland's annual public sector purchasing accounts for 10% to 12% of the national GDP, the public sector can significantly stimulate the provision of more resource-efficient, less polluting goods and services within the marketplace.

A second step is to regulate embodied carbon emissions for all projects as a growing number of countries have or are in the process of doing (e.g., Denmark[2], Finland, France and the Netherlands). A planned schedule of stricter limits would then give the industry long term visibility on what it needs to do. This in turn would support the drive for innovation which is needed to rapidly cut emissions.

Q3. WHAT OTHER KEY ISSUES SHOULD THE GOVERNANCE PILLAR DEAL WITH?

Besides covering all the issues mentioned under section 6.2, the main role of the "governance pillar" should be to ensure a coordinated cross-departmental approach to the development and implementation of the strategy. This is key to ensure the strategy reaches its objective, while avoiding unintended consequences.

Q4. WHAT KEY ISSUES SHOULD THE RESEARCH, DEVELOPMENT & INNOVATION PILLAR DEAL WITH?

In relation to construction and the built environment, research should focus on supporting the development of low carbon biobased construction materials, and ensuring high quality data on the performance (including environmental, and impact on health) of these materials is available.

Across all sectors, and as highlighted in the EU 2018 Bioeconomy Strategy, further research is needed on how to better manage biosphere use to meet both environmental and economic requirements. Given Ireland ambitious timber targets, this is something that is particularly important in this sector.

Q5. HOW COULD THE RD&I BIOECONOMY APPROACH BE BEST STRUCTURED TO SUPPORT THE ENHANCEMENT, APPLICATION AND SCALING-UP OF BIOLOGICAL KNOWLEDGE AND BIOECONOMY SOLUTIONS?

As previously highlighted, GPP has a key role to support the development of a biobased construction materials industry in Ireland - public bodies such as the Hauts-de-France region in northern France are already using it to support the development of their own industry.

When it comes to research and innovation, increase support for innovative methods of construction and materials is needed. For instance, funding for Enterprise Ireland's Built to Innovate programme could be increased to further support research concepts or process innovation ideas; a design and capital grants scheme similar to the highly successful SEAI's EXEED programme should be introduced for project

[2] Since 1st Jan. 23, embodied carbon emissions from buildings are regulated in Denmark. I.e., full LCA is required for all new buildings and a limit value of 12kg CO2eq./m²/yr for new construction over 1000m² has been introduced.

developers engaged in innovative, measurable low carbon construction technologies, including biobased technologies.

Finally, the newly established National Research Centre for Construction Technology and Innovation, ConstructInnovate should further support research in that area.

Q6. WHAT KEY ISSUES SHOULD THE NATURE, CLIMATE & CIRCULAR PILLAR DEAL WITH?

This pillar should look at regulatory and fiscal barriers, currently inhibiting, or slowing down adoption of innovative construction methods, products and processes. More specifically,

- TGD B must be reviewed to address the limits placed on timber construction above 3 stories.
- The application and interpretation of TGD D and requirement for certification (Irish Agrément) must be clarified to support innovation and reduce delays and costs in this certification system.
- To secure a future supply of low carbon materials, the licencing of planting and felling of timber, as well as of industrial hemp production, should be reviewed.
- The application of articles 27 & 28 of the EU Waste Framework Directive in Ireland must be reviewed to enable reuse of materials or speed up the licencing process.

When it comes to finance, it is suggested to provide financial incentives or directly fund production facilities for biobased construction materials (e.g., CLT, sheep's wool, hemp, and straw), as it was done in Scotland to support the development of natural fibre construction insulation. E.g., through an accelerator scheme. Another option that could be explored, is the introduction of a reduced VAT rate on construction products which contribute to carbon savings across their whole life cycle.

Q7. WHAT KEY ISSUES CONCERNING CONSUMPTION PATTERNS NEED TO BE EXAMINED TO CLOSE THE GAP BETWEEN SUSTAINABLE SUPPLY OF BIOLOGICAL RESOURCES AND DEMAND?

In relation to the built environment, there is a need to raise awareness about embodied carbon emissions in the industry and among the general public. This should lead to a better understanding of the need to reuse/better use the existing stock and to transition to low embodied carbon materials. As another issue is the cost of biobased construction materials (often produced at smaller scale) vs. traditional materials, their development should initially be supported through GPP, and other financial incentives (e.g., grants, lower VAT rate).

Q8. WHAT KEY ISSUES SHOULD THE AGRICULTURE, FOOD & THE MARINE PILLAR DEAL WITH?

Ireland with a large agricultural sector has a strategic interest to identify, encourage, and develop local low carbon biobased construction solutions from agriculture and forestry and to encourage solutions from the circular economy – reusing resources that are already available locally.

This could be done through strategic government investment in production or risk sharing aiming to create large export orientated industries building on success of industries such as Coillte's MediteSmartply. This could start with a feasibility study such as one developed in 2022 by DAFM for wool production, extending to other potential construction materials such as Cross-Laminated Timber (CLT), industrial hemp, straw and other agricultural fibres, as well as exploring potential of newer bio-based materials such as mycelium. These industries will only likely gain traction with significant state involvement through investment and engagement with the agriculture sector.

Q9. WHAT KEY ISSUES SHOULD THE COMMUNITIES PILLAR DEAL WITH?

Under the communities pillar, government should ensure the strategy is developed and implemented through extensive and transparent stakeholder engagement. Local authorities could support that engagement process and lead by example, by investing in developments which adhere to higher sustainability standards, including innovative construction with biobased materials. This in turn could support capacity building in industry and contribute to awareness raising across Ireland.

Q10. ARE LOCAL AND REGIONAL POLICIES ENSURING THE CONSIDERATION OF BIOECONOMY OPPORTUNITIES IN SCOPE, AND ARE COORDINATED APPROACHES ON SUCH SERVICES IN PLACE AT REGIONAL ASSEMBLY AND LOCAL AUTHORITY LEVEL?

Local and regional policies are needed to ensure the consideration of bioeconomy opportunities. However, the bioeconomy strategy must ensure national, regional, and local initiatives are well connected to avoid a piecemeal approach across the country. While local authorities should lead by example and invest in buildings adhering to higher sustainability requirements (see Q9), they must also liaise with adjacent local authorities to ensure consistency in planning policies, including embodied carbon emissions to avoid buildings being constructed in local authorities with the least strict planning standards.

Q11. WHAT KEY ISSUES SHOULD THE INDUSTRY & ENTERPRISE PILLAR DEAL WITH?

The industry and enterprise pillar has a key role to play in supporting the development of a biobased construction materials industry in Ireland. Besides looking at the regulatory and fiscal barriers previously mentioned, this pillar should look at providing financial incentives or directly fund production facilities for biobased construction materials (e.g., CLT, sheep's wool, hemp, and straw), as it was done in Scotland to support the development of natural fibre construction insulation. E.g., through an accelerator scheme.

The industry and enterprise pillar should also look at increasing financial support for small manufacturers to develop EPDs, reduce the carbon impact of their products, and to facilitate safety testing and certification of low carbon construction products. The pillar should also explore ways to incentivise producers to explore the potential of the local bio economy to develop new product lines or new circular business models such as product as a service.

Finally, the pillar should work with the insurance sector as it is currently a barrier to bio-based building, including CLT. The Alliance for Sustainable Building Products is developing a Mass Timber Insurance Playbook, but there seem to be a disconnect between the questions insurers ask and the data that bio-based approaches provide.

Q12. WHAT LEAD MARKET INITIATIVES COULD SUPPORT ENTREPRENEURSHIP, DEVELOPMENT, INNOVATION AND THE COMMERCIALISATION OF BIO-BASED PRODUCTS, PROCESSES, INFORMATION, AND SERVICES?

Please see our responses to Q.11, 8, 6 and 5,

Q13. DUE TO THE REQUIREMENT FOR CAPITAL AND OPERATIONAL INVESTMENT WHAT INNOVATIONS AIMED AT FINANCING INFRASTRUCTURES AND TECHNICAL AND ECONOMIC EVALUATION OF INNOVATION ARE NECESSARY TO SCALE UP THE BIOECONOMY?

As a growing number of countries have or are in the process of regulating embodied carbon emissions, developing this industry and building expertise in this area will ensure Irish companies remain competitive. The development of a strong biobased construction materials industry could also support sustainable, local jobs across the country. There is hence a good business case for the state to invest in the development of a strong biobased construction materials industry, being through strategic government investment in production or risk sharing aiming to create large export orientated industries, and the generalisation of green procurement for all publicly funded projects.

The IGBC has some concerns in relation to the focus on carbon removal technologies in the document. While important, these are expensive and, as of 2022, unproven technologies. The priority in the next decade should really be to invest in the development of a strong biobased construction products industry.

Q14. WHAT KEY ISSUES SHOULD THE KNOWLEDGE & SKILLS PILLAR DEAL WITH?

Transitioning to lower embodied carbon buildings, including buildings constructed / renovated with biobased and reused materials will require significant upskilling across the value chain.

Upskilling of building professionals and construction workers in whole life carbon and circularity should be facilitated (e.g., through affordable, flexible, and online/blended training courses) and incentivised (e.g., the Construction Industry Register of Ireland – CIRI - could be put on a statutory footing and integrate minimum upskilling requirements in Whole Life Carbon and circularity).

The pillar should also engage with third level institutions and apprenticeship providers to ensure whole life carbon and circularity skills are fully covered as part of these programmes.

This work could be informed by the EU-funded Build Up Skills Ireland 2030 (BUSI2030) project run by the IGBC, the Technological University of the Shannon, CIF and Laois-Offaly Enterprise and Training Board. Under BUSI2030, the project partners will develop a roadmap of green skills needed in the construction industry till 2030. The roadmap (to be launched in Dec. 23) will cover energy efficiency, circularity and whole life carbon skills for both building professionals and construction workers.

Q15. CAN THE REGIONAL SKILLS AND REGIONAL ENTERPRISE APPROACHES BETTER SUPPORT BIOECONOMY DEVELOPMENT?

The IGBC does not have a position on this topic.

Q16. AN IMPORTANT PART OF DEVELOPING THE BIOECONOMY IS TO DETERMINE THE MOST APPROPRIATE PRACTICES, TREATMENTS, TECHNOLOGIES, LOGISTICS AND BUSINESS MODELS TO VALORISE ECOSYSTEM SERVICES, PRIMARY AND SECONDARY BIOMASS RESOURCES. WHAT ROLE DO ADVISORY SYSTEMS PLAY IN ADDRESSING THIS CHALLENGE?

To determine the most appropriate practices, treatments, technologies, logistics and business models to valorise biomass resources in the construction industry, increase support for innovative methods of construction and materials is needed. E.g., funding for Enterprise Ireland's Built to Innovate programme could be increased to further support research concepts or process innovation ideas; A design and capital grants scheme (similar to SEAI's EXEED programme) could be introduced for project developers engaged in innovative, measurable low carbon construction technologies, including biobased technologies.

Finally, the pilar should work closely with the newly established National Research Centre for Construction Technology and Innovation, ConstructInnovate as the centre could further support research in that area.

Q17. ARE THERE ANY FURTHER PILLARS/ISSUES WHICH THIS ACTION PLAN SHOULD ADDRESS?

In relation to governance and awareness raising issues, there is a need to raise awareness of embodied carbon emissions, and biobased/ reused construction materials among the general public. This is key in increasing trust in these new materials. Exemplar buildings using these process and technologies could be developed by local authorities/ educational providers across the country to raise awareness of the benefits of using these materials.

Q18. INDICATE WHAT THE TOP FIVE PRIORITIES FOR ACTION IN THE BIOECONOMY OVER THE NEXT THREE YEARS SHOULD BE?

As previously highlighted, the construction and built environment account for 37% of Ireland's carbon emissions. This is made up of about 23% operational emissions, with the remaining 14% being accounted for by embodied carbon. A recent carbon modelling report commissioned by the IGBC to a group of researchers in UCD shows that **Ireland cannot reach its 2030 climate targets without addressing embodied carbon emissions. Encouraging a greater use of low-carbon construction processes and materials, including biobased and reused materials, is key in addressing embodied**

emissions. Furthermore, Ireland with a large agricultural sector has a strategic interest to identify, encourage, and develop local low carbon biobased solutions from agriculture and forestry.

As such, the top five priorities to support the development of a biobased construction materials industry in Ireland should be as follow:

- Regulate whole life carbon emissions in construction: I.e., Introduce measurement through mandatory disclosure and publish a planned schedule of stricter limits to give the industry long term visibility on what it needs to do to decarbonise construction. This in turn would support the drive for innovation.
- Address regulatory barriers to a greater use of these materials in Ireland (see Q.6)
- Consider strategic government investment in production or risk sharing aiming to create large export orientated industries building on success of industries such as Coillte's MediteSmartply
- Support upskilling of building professionals and construction workers in whole life carbon and circularity
- Raise awareness about the importance of addressing whole life carbon and the benefits of using biobased and reused materials.