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Bioeconomy Action Plan
Consultation,

Land Use and Sectoral Policy
Division,

Department of Environment,
Climate and Communications,

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Via Email : Bioeconomy@decc.gov.ie

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To whom it may concern,

Please find attached a response to the Bioeconomy Action Plan Consultation.

Yours sincerely,

[redacted]

[redacted]

[redacted]

Bioeconomy Action Plan Consultation

1. Are you satisfied the outlined Pillars represent the structure of the Irish bioeconomy?

Forests can deliver the multiple objectives of climate, nature, wood and people and have the capacity to provide a wide range of economic, environmental, and social benefits. They help tackle climate change, supply sustainable wood products to help build our homes, provide valuable habitats for our wildlife, and offer places for people to visit and enjoy that contribute to our health and wellbeing. Forestry is currently included under the 'Agriculture, Forestry and Marine' pillar. Given the significant importance of forestry, consideration should be given to prioritising Forestry and Wood as a standalone pillar on its own.

The forestry and forest products sectors are one of the primary examples of a functioning bio and circular economy. As trees grow, they sequester or **Sink** carbon, which is **Stored** in their wood. When trees are harvested and converted into long life wood products for construction and other uses, they **Store** that carbon in buildings and other wood products. The use of wood products **Substitutes** and replaces the use of other non-renewable high carbon products such as concrete, plastics and other such materials. This Sink, Store and Substitution of carbon has a triple effect on climate. To complete the loop once trees are harvested, they are immediately replaced with new plantations to commence the circular process once again for sinking and storing carbon. In addition, the forest products sector has developed over the last decade to employ 12,000 people in 'green' supply chain jobs, with export sales of €573 and providing an overall contribution of €2.3 billion to the exchequer each year and further offering significant potential for new jobs, growth, and innovation as the forecast annual roundwood harvest from our forests is set to double over the next decade.

2. Are there specific key performance indicators and/or targets the bioeconomy should be setting out to achieve to measure its implementation?

KPI: Afforestation Area per annum (hectares) - There is an urgent need for Ireland to meet stretching climate action targets and creating new forests is integral in the achievement of these targets. The Government's long-term target is to have 18% forest cover in Ireland. Currently forest cover in Ireland is 11.6% compared to an EU average of 40%. To achieve 18% forest cover requires the creation of an additional 448,000 ha of afforestation. To put this in context Ireland's current run rate is c.2,000 hectares per annum. Therefore, Ireland needs to urgently ramp up its rate of afforestation and it needs to be done at scale to reach our Climate Action Targets.

KPI: Built Environment –Mandatory Embodied Carbon Thresholds for New Builds (to drive the use of low carbon sustainable building materials):

Globally, construction and the building sector represents 38% of global energy related CO2eq emissions and reducing the carbon footprint of our future building stock is key to tackling climate change and to achieving our Net Zero ambitions. Simply growing more trees and using this locally produced timber in our built environment will make a difference. Timber products have the lowest embodied carbon of any mainstream building material, meaning they take less energy to produce and are better for the environment. We urgently need to introduce policy supports to prioritise low carbon building materials and sustainable procurement. Policy now needs to shift towards embodied emissions and several countries have strategies to limit Green House Gas (GHG) emissions in construction which include the

issuing of carbon budgets for buildings and making Lifecycle Carbon Assessments (LCA's) a mandatory part of the planning process. Developers are required to demonstrate the measures taken to reduce a buildings carbon footprint and are benchmarked against international standards. Low carbon building materials should be given preference and central Government and local authorities should take the lead with the introduction of 'Wood First' procurement policies for all publicly funded capital projects such as social housing, schools, community facilities etc introducing requirements on a phased basis and providing appropriate support to procurers. Government should embed mandatory LCA's and embodied carbon thresholds within local and national building plans. Whole Life-Cycle Carbon Assessment reporting should apply in the first instance to strategic developments and then be rolled out to all residential and commercial construction projects through targets, policy directives and regulation.

KPI: Promote the cascading principal use of wood - EU policy and debate promote the cascading use of wood, where virgin wood fibre is used to develop long life carbon products that store bio-genic carbon in wood products. In the future these long-life products should be designed to be circular, to allow them to be reused after initial use. Residual wood fibre from initial processing should then cascade down to develop wood fibre panel products such as Orientated Strand Board, Medium Density Fibreboard and Wood Fibre Insulation for the construction industry. Residual material should then cascade down for use in future bio-refiners to produce bio-products. Only then are residual materials from long life circular products used to develop heat, power and biofuels. Policy needs to promote research and development of product innovation, circular design, the development of a bio refining capacity and the implementation and support of the cascading principle to ensure wood is used in the optimum manner to hold and store carbon.

3. What other key issues should the Governance Pillar deal with?

Regulatory Coordination - There is a need to ensure regulations across all departments do not act as a barrier to the development of the bioeconomy and bioeconomy pillars. Currently there are issues with administration of forestry licences limiting access to timber and the overall development of the sector. There are also restrictive building regulations which prohibit the use of timber in buildings over a certain height. These regulations are contrary to similar provisions in Europe and overseas. Our answer to Q4 below provides more detailed examples. The limitations on the use of timber in construction is reinforcing the continued use of more carbon intensive building materials and as a result fossil fuels and is contrary to climate action emissions targets. We would strongly recommend a benchmark review of regulations across sectors which would highlight best practise and proposals for new regulations but would also look at regulations which restrict investments in areas of the bioeconomy and put in place a timeline for their removal or amendment.

Collaboration and Connecting Resources – Given Irelands rich bio resources across agriculture, forestry and the marine, the strategy should look to ensure collaboration is fostered and encouraged across sectors (public & private), academia, government departments and other parties to ensure we work collaboratively to achieve the optimum outcome. Example – where different players are working on similar opportunities/challenges drawing on funding and expertise, that a collaborative approach could give a better outcome. This potential could be delivered through a cross sector forums with the relevant players.

4. What key issues should the Research, Development & Innovation Pillar deal with?

It is recommended that a cross departmental Government working group be established with the following key objectives to:

Unlock regulatory barriers limiting the use of wood in the built environment - The use of wood in construction systems is limited in Ireland. Technical Guidance Document (TGD) Part B restricts the use of limited combustible materials, such as timber to buildings up to 4 storeys and implies that demonstration of fire resistance by calculation is not acceptable under Volume 2. Further, the guidance provides prescriptive construction details which if not followed would require fire testing to demonstrate compliance. Both requirements have a negative effect on the use of timber and on the introduction of new building systems that use timber. The upcoming review of the TGD's should ensure that prescriptive construction details, if proposed, do not negatively impact the use of timber or new building systems that use timber. Some minor amendments to specific clauses within the Building Regulations, in line with other jurisdictions, would permit timber-based buildings over 10m in a manner to ensure the highest levels of fire safety.

Demonstrate and test new forms of off-site timber building systems to support a compliance pathway – Demonstration projects would allow design practitioners, developers, construction contractors, fire engineers and permitting and approval authorities to understand new emerging low carbon timber building technologies and benefit from the lessons learned from these building projects and the associated research. The Department of Housing, Local Government and Heritage, should design and construct exemplar demonstration buildings using state-of-the-art mass timber and high-rise timber frame building design solutions and monitor their performance and compliance. Introduce supports to de-risk early adoption of new low carbon building solutions and a demonstration fund for private developers to cover the incremental costs in design and construction of buildings that demonstrate emerging or new timber or timber hybrid building systems and construction processes.

Support research, development, and innovation in the forest products sector - As with so many sectors, innovation will be key to developing new sustainable timber building products and systems. Laminating, gluing, and peeling technologies offer immense opportunity to develop innovative products including cross laminated timber, laminated veneer lumber and wood fibre insulation with homegrown wood. Circularity in timber products will potentially be a key product/system design feature into the future and R&D will be required to support this development. Additionally, we need to develop new bioeconomy opportunities for cellulose and lignin-based products to displace fossil-based ones. Pushing the boundaries, timber can replace plastic and other materials; the opportunities are endless.

5. How could the RD&I bioeconomy approach be best structured to support the enhancement, application and scaling-up of biological knowledge and bioeconomy solutions?

RD&I programme development needs to work with business to develop keys area of focus that are market led and which business can support. Where possible links/relationships should be established with other European R&D partners to leverage their knowledge and expertise.

6. What key issues should the Nature, Climate & Circular Pillar deal with?

Adopt the Cascading Principle and Undertake a Review of Waste Management Policy particularly in relation to construction. Consideration should be given to proposals for local authorities to plan developments which adhere to strict nature, carbon, and climate targets. Construction should be incentivised to use products from sustainable and low carbon-based sources and to encourage the use of stored carbon. Pre-fabrication, quicker construction materials etc. should be prioritised over materials that require large amounts of power or energy to construct on site or generate carbon emissions. A focus on the built environment in terms of nature, carbon and climate is important given other government objectives in terms of housing, for example.

Design for Circularity - As outlined in reply to question 2 above - EU policy and debate promote the cascading use of wood, where virgin wood fibre is used to develop long life carbon products that store bio-genic carbon in wood products. In the future these long-life products should be designed to be circular, to allow them to be reused after initial use.

Manage Biotic and Abiotic Risks - forestry and forest products in Ireland is largely absent of many of the significant pests that occur in continental Europe although recent arrivals such as ash-die back and sudden oak death have the potential to cause immense damage. R&D should focus on identifying risk pathways and design effective mitigations.

Payment for Ecosystem Services - Forests can also deliver many ecological, social and environmental (ecosystem) benefits. This pillar should address the issue of payment for these ecosystem services to support the continued and sustainable provision of these services and the balanced delivery of benefits for climate, nature and people. This pillar will be common across all land use management types into the future and a key foundation to support future sustainable land use models.

7. What key issues concerning consumption patterns need to be examined to close the gap between sustainable supply of biological resources and demand?

Focus on Sustainable Low Carbon Building Products - There is an urgent need to focus on embodied carbon and to set construction targets around emissions given that government policy is to significantly increase the housing stock in the coming years. Ensuring that our future housing stock is constructed in a carbon neutral fashion and that we transition away from old building practices that rely on more traditional carbon intensive building materials.

Education - One key area is the education of society on the potential of the bioeconomy and on how these natural resources can be used, but also in how they need to be used in an optimal manner i.e., that wood is used to develop long life carbon products that substitute more intensive carbon products and not used primarily to generate large scale heat and power requirements. Another focus area is to look at how circularity can be supported and designed into product and system design.

8. What key issues should the Agriculture, Forestry & the Marine Pillar deal with?

The bioeconomy refers to economic activity derived from the use of biological resources such as wood to produce products (materials, energy, fuels and chemicals) and services (recreation, carbon credits and ecosystem/nature-based services).

The circular economy refers to economic activity based on the use, reuse and recycling of resources and materials. In a circular economy the value of material is preserved for as long as possible with the overarching aim of minimising the use of virgin resources.

Remove Barriers and adopt the Cascading Principle - This pillar should focus on removing known barriers limiting timber use and by supporting the forestry and forest products sector to continually innovate the products and services that can be developed from our forests. Our aim should be to use wood in a sustainable manner under the cascading principal use of biological resources, where the waste of one wood process is used to produce other products as follows:

- Initially processing wood into high value long life, circular, carbon products such as construction products (sawn wood and engineered wood)
- Waste stream from primary processing (residual wood) is then used to manufacture wood-based panel products such as OSB, MDF, Wood Fibre Insulation and other products.
- Waste streams from the above will then be biorefined to make high end products such as products, fuel and chemicals.
- Finally, after these valuable natural resources have been used and re-used its potential end of life will be to create heat or power.

This principal use of biological resources in a cascading model is in-line with the ambition of the EU Green Deal, which aim to make Europe Net Zero by 2050.

9. What key issues should the Communities Pillar deal with?

Promote Forestry in Urban Areas - encourage more focus on setting targets for local authorities to consider their land use strategies for biodiversity needs or public access forestry. Coillte believes there are opportunities for further collaboration with local authorities on improving recreation facilities and access to forest parks. Studies have shown the positive mental health benefits for people with access to forest walks or parks.

Support Rural Employment and Economic Development - Forestry is principally a rural based sector, providing jobs, locations for health and wellbeing and contributing to local economies all around the country. Forestry and forestry related activities and business should form a pivotal role in addressing issue in the communities pillar.

10. Are local and regional policies ensuring the consideration of bioeconomy opportunities are in scope, and are coordinated approaches on such services in place at regional assembly and local authority level?

Increase Collaboration - Increased coordination between local and regional authorities on climate and nature targets is needed. As stated above a policy to encourage local authorities to increase their land use under forestry and increase the level of access to forestry parks and walks. Such policies should be set nationally with local authorities encouraged to develop local strategies.

11. What key issues should the Industry & Enterprise Pillar deal with?

Ireland's forests already make significant contribution to the economy and society but due to our relatively low forest cover, the age structure of our forest estate and the emergence of new scientific and technological developments, there is potential to substantially increase this contribution in the years to come. A growing forest bioeconomy will not only boost economic growth but will also help meet national commitments to aid in food production, reduce greenhouse gas emissions, manage natural resources and ecosystem services sustainably, reduce reliance on imports while promoting rural development and has the potential to deliver significant public benefits.

The principles guiding development of a forest bioeconomy should be:

- maximisation of economic value,
- maximisation of carbon storage,
- adoption of a cascading use approach.

These principles provide guidance and are not presented in a prioritised order, and they are not suggested as hard and fast rules. It is foreseeable that instances may arise where principles are in conflict and trade-offs and balanced judgement will be necessary. By applying these principles, it would appear that there are four significant areas for development in the medium term:

- Engineered eco-construction building materials,
- High energy efficiency,
- New Innovative Products,
- Ecosystem Services.

12. What lead market initiatives could support entrepreneurship, development, innovation and the commercialisation of bio-based products, processes, information, and services?

Anything that can be made from fossil fuels can be made from cellulose and in a world of increasing carbon constraint we will see much more innovation in the use of wood. Ireland should actively participate in international research and innovation networks which have a strong commercialisation focus. We should also be prepared to lead research where international research is not addressing issues specific to our local context. Ireland should look at the development of incubator and accelerator programmes for corporates and others to work with start-ups to develop bioeconomy business opportunities.

13. 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?

We would encourage measures to support capital and entrepreneurial activity and specifically regulations are reviewed to identify if there are 'costs to businesses' which can be reduced and 'red tape' regulations amended or removed to encourage more investors into more riskier investments.

14. What key issues should the Knowledge & Skills Pillar deal with?

- Increasing awareness and inclusion of the Bioeconomy in the second level curriculum.
- Development of appropriate third level programmes & qualification for the Bioeconomy.

- Development of Education and Training programmes to build the necessary skills within the current workforce.
- Development of an innovation process to support the generation of ideas and projects that will help drive the sector.
- Sourcing of local and overseas talent in the short term to help lead and drive the sector.
- Support our design professionals who deeply influence our choice of building material, Funding should be provided to industry to develop design guidance and supports to enable design professionals to specify timber correctly and to provide greater clarity around the environmental and climate change mitigation benefits timber and wood-based products can offer.
- Support to be provided to relevant professional bodies to increase competency of the fire engineering profession to work with timber frame and mass timber construction. The Government should undertake wider public outreach and advocacy initiatives to create a link between our forests, forest products and climate change.

15. Can the regional skills and regional enterprise approaches better support bioeconomy development?

16. 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?

Selecting processes and technologies appropriate to the available resource to produce a marketable product, and sustainable business model are challenging and will require support from different bodies. This could involve technical support in testing resources, assessing processes and technologies and then supporting product and business development.

17. Are there any further Pillars/Issues which this Action Plan should address?

18. Indicate what the top five priorities for action in the bioeconomy over the next three years should be

1. Ensure a long-term, consistent and growing supply of roundwood to the processing industry by supporting and investing in the national afforestation programme.
2. Unlock the regulatory barriers limiting the use of wood in the built environment and introduce policies and targets that promote the use of low carbon building materials and adopt a strong ‘wood first’ public sector procurement policy.
3. Support and promote the innovative use of wood products and new timber building systems in construction through research, training and professional development.
4. Embed the cascade use principle for wood resource management and planning in national policy.
5. Increase awareness and inclusion of the Bioeconomy at Second level and Third level and promote a deeper understanding of the economic, social and environmental benefits of the forestry and forest sector to the circular bioeconomy among the general public though a well-resourced and sustained communications campaign.