

Bioeconomy Action Plan Consultation
Land Use and Sectoral Policy Division
Department of Environment, Climate and Communications
29-31 Adelaide Rd, Saint Kevin's, Dublin, D02 X285.

By email

Irish Bioenergy Association (IrBEA)

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From: [REDACTED]

To: bioeconomy@decc.gov.ie

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IrBEA response to Bioeconomy Action Plan Consultation

Dear Sir/Madam,

Thank you for the opportunity to contribute to this consultation on behalf of our members.

We have answered the specific consultation questions below but would like to make the following general points.

IrBEA as the representative organisation for the bioenergy sector on the island of Ireland. Our membership spans the differing bioenergy sectors of solid biomass, biogas/biomethane, biofuels, biochar, wood fuels and energy crops. IrBEA members strongly believe that bioenergy is a key component of the bioeconomy. Bioenergy is very important to develop supply chains which potentially in the future could feed an emerging bioeconomy.

IrBEA welcomes the advancement of the emerging bioeconomy but acknowledge that it will require continuing support and development if it is to realise its full potential. A successful bioeconomy will depend on a cross sectoral approach, requiring input and expertise from a broad range of stakeholders. Appropriate financial and policy based mechanisms will need to be developed in tandem with emerging technologies and processes. This will likely require an increased level of cooperation across the various government departments, DAFM, DECC and DETE, and in collaboration and partnership with industry and stakeholders. The Bioeconomy Implementation Group has to date been responsible for driving the development of the sector. With further and enhanced support from the Department of Enterprise, Trade and Employment and other relevant departments, faster growth of the sector could be realised, in association with industry and stakeholders.



Many IrBEA members are already actively involved in the bioeconomy space, operating both here and abroad. They include the likes of biofuel producers, technology providers, designers and installers, supply chains and logistics responsible for mobilising biomass feedstocks, biomass analytical companies, researchers, farmers and foresters. The complimentary role many of these stakeholders can play within the bioeconomy space is likely to be increasingly important, particularly in light of the cascading principles of biomass use outlined in the document.

This submission reflects broadly the view of our membership. Separately, a number of IrBEA members will be submitting their own specific consultation responses. We support the work of our members in developing the bioeconomy.

A successful and operational bioeconomy sector will be wholly dependant on the development of biomass supply chains. Current Government policy does not strongly focus on the development of biomass supply chains with favourable incentives and supports. Biomass supply chains have potential to be evolved and diversify to satisfy a growing bioeconomy as it develops and matures. But without the supply chains being developed for bioenergy purposes in the short to medium term, this bioeconomy potential will not be realised.

For a successful bioeconomy in Ireland, both low and high tech processing technologies should be considered and deployed where appropriate.

The various forms of bioenergy are wholly and entirely complimentary to the development of a bioeconomy sector and in many cases can not only allow valorisation of various biomass fractions but can also be utilised for energy provision in the various forms of production processes.

These complimentary sectors can undoubtedly assist in the development of biobased products and services, bio based materials, the increased penetration of biofuels in our hard to decarbonise transport sectors in the forms of biomethane, bioethanol, biodiesel, sustainable aviation fuel or indeed hydrogen. Complimentary to the provision of biofuels is the provision of sustainable feed requirements for both humans and animals. This can reduce our reliance on non-EU imported food, energy and chemicals. The sectors will also provide regionally available and localised job opportunities, and drive the economic and jobs opportunity in urban, rural and coastal communities.

The 40 By 30 report¹ produced by Renewable Energy Ireland outlines the role bioenergy can play in decarbonising certain sectors' heat requirements using solid biomass or biogas/biomethane. These energy sources can be particularly useful in decarbonising high temperature heat requirements often required by industry. The development of new and

¹ https://renewableenergyireland.ie/wp-content/uploads/2021/05/Renewable-Energy-Ireland_Renewable-Heat-Plan_-_Final.pdf



existing facilities transitioning towards bioeconomy models should factor in the use of bioenergy where appropriate.

The role of bioenergy within our transport sector should also be recognised as evidenced by a recently commissioned report by IrBEA,² “Transport in Ireland- a pathway to halving emissions.” The report outlines the role the use of bioethanol, biodiesel and biomethane can have in the further decarbonising of our transport sector- three sources of bioenergy whose production can integrate into various biorefinery processes, capable of conversion of biomass residues into valuable sources of transport fuel.

IrBEA recognises the potential role that the successful development of an Irish biomethane/biogas sector could have in reducing the level of fossil gas within our network, allowing for valuable nutrient cycling to be supported through the processing of our biogenic and agricultural residues and feedstocks such as slurry and grass silage. The European Commission has identified that Ireland in the context of feedstock availability, has the highest potential in terms of the development of a biomethane sector. The Bioeconomy Action Plan should reflect this. The target of 5.7TWh of biomethane by 2030 has been set by the Government and it is expected a large portion of that will have to come from agricultural sectoral involvement³. Once biomethane facilities are established and the feedstock supply chain mobilises, consideration could then be given to biorefining options for grass based feedstock ahead of use in biomethane production facilities. This full valorisation of grass based feedstocks will be difficult to achieve without the facilities being in place first, which should be the first priority for any Government Biomethane strategy. Current discussions about CO₂ recovery, CCUS, biorefining pre-treatment add significant costs to any development and as a result, should be considered post mobilisation of basic biomethane production facilities. The Bioeconomy Action Plan should examine where the emerging bioeconomy sector can align with the target of 5.7TWh and assist in the scale of development that is necessary to achieve that figure.

Addressing issues within the planning system will be key to mobilising the sector. The planning system needs to distinguish between small scale development and multi megawatt/ large scale industrial systems.

As with any emerging sector, the challenge exists to effectively communicate the possible potential benefits of a well developed bioeconomy to general stakeholders. IrBEA believe this will be essential in order to obtain industry and community buy in and to encourage a switch to a biobased economy. The need for an ongoing, sustained and effective

² <https://www.irbea.org/wp-content/uploads/2021/12/Irish-Bioenergy-Association-UCC-MaREI-Renewables-In-Transport-Report-Final.pdf>

³ <https://www.gov.ie/ga/preasraitis/dab6d-government-announces-sectoral-emissions-ceilings-setting-ireland-on-a-pathway-to-turn-the-tide-on-climate-change/>



communication campaign targeting all aspects of society is worth consideration and perhaps this could be reflected by the inclusion of a standalone communications pillar within the Action Plan.

As an organisation representing the various bioenergy disciplines, we firmly believe that bioenergy can continue to provide both bioeconomy and decarbonisation opportunities across a wide range of sectors and society.

We welcome an opportunity to engage with the department further as the Government develops this Bioeconomy Action Plan

Yours sincerely,

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

For the most part, the outlined structure covers most aspects but as noted in the introduction, consideration may be given to the development of a standalone pillar responsible for communications and outreach. While it is indicated that the Governance pillar will cover communication activities over the other pillars, given the scale of the challenge in enabling society and industry to make the switch, sustained and targeted communications should be implemented across all aspects of society in order to firmly embed not only the reasoning behind developing a bioeconomy from a climate, environmental and sustainability perspective, but also the scale of potential economic opportunities that it could bring with it.

We also support the submission of IrBEA member Sustainable Flight Solutions, in calling for a standalone pillar that also deals with the area of transport.

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



Number of SMEs or large industry actively promoting their switch to biobased production and consumption methods.

Development/ roll out of biogas/biomethane plants regionally, capable of handling agri residues and waste, to achieve the Governments 5.7TWh target.

Development of green waste handling facilities for production of compost, solid biomass heating and carbon products

Overall reductions in volumes of imported food, animal feed, agri chemical inputs, fossil fuels, etc and an increase in the number of indigenously produced biofuels, biobased materials, novel proteins, and chemicals.

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

As stated in the consultation document, there exists “still a lack of broad public, community and industry understanding and awareness of the bioeconomy opportunity.” In the absence of a dedicated, standalone pillar dealing with communications, and as suggested in this response, the scale of the communication effort required to bridge the gap in knowledge and understanding of the sector is substantial. If communication is to remain under the pillar of Governance, more consideration should be given and outlined in the action plan as to how this gap is to be effectively bridged.

The Governance pillar could also examine the various national and European legislative bottlenecks preventing the increased use of biomass feedstocks within processing facilities.

For example, the allowance of category 3 tallow within biodiesel processing facilities could see its production increase significantly here in Ireland.

Another example is the Nitrates derogation and its impact on the classification of digestate as a direct substitute for chemical fertiliser, which isn't possible at present due to regulatory barriers.

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

In the main, so far, the bioeconomy in Ireland has struggled to move much beyond the research phase and this should be a key consideration of this pillar.

The bioeconomy opportunity can exist at all scales and should encompass low tech technology offerings all the way up to high tech technology processing facilities.

Processing technology- focus could be placed not only on the high cost complex processing technology, but also on low tech processing options that can also play a part.

Provision of simple, effectively communicated set of guidance documents/notes providing the less informed with easy to understand information as to what is possible from different



locally available biomass feedstocks, the types of products or services that could be produced, why these are useful, what they offset and what type of processing technologies would be required to make them feasible from an economic standpoint. This type of information is likely well understood from the research, development community but is largely not understood or comprehended by the general public.

The various national contact points for different funding streams (Interreg, Horizon Europe etc.) could be provisioned with additional resources to assist in the development of successful funding applications, mentoring applicants and connecting stakeholders to form consortium with wider European stakeholders, enabling transfer of knowledge and innovative practices between regions.

Focus on sustainable systems that are capable of provision of both animal and human nutrition, as well as sustainable heat and transport fuels, whether its road or air transport.

Will require investment and demonstration sites with facilitated study tours for interested parties.

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?

Research focus should be on practical solutions at all scales and sizes to get widescale buy in across all aspects of society.

Industry involvement is critical to drive and support the scaling of knowledge in bioeconomy solutions.

Continued development of consultative forum, bilateral engagements, site visits and tours to operational facilities- all of these can play a role in the approach taken by this pillar.

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

The document states that this pillar will outline actions which will aim to ensure renewable energy and bioeconomy function harmoniously- IrBEA welcomes the inclusion of this text as it encapsulates the ethos already being employed by many of our members, where the provision of various forms of bioenergy are in fact just part of a wider supply chain that is providing other sustainable biobased products such as construction timber or timber products, organic fertilizer in the form of digestate, animal and human feeds and proteins. The development of the bioeconomy supply chain is dependent on the development of biomass supply chains which the bioenergy sector is currently doing. The need to develop biomass supply chains is not strongly articulated within Government energy supports and incentives, where the primary focus tends to be strongly on the electrification agenda.



The conversion of certain biogenic residues to stable forms of carbon (in the form of biochar) can assist in addressing many issues that can come under the general umbrella of nature, climate and circularity. Biochar production and use has been recognised by the IPCC as a promising NET- negative emissions technology capable of carbon sequestration at scale at a cost that is favourable compared to alternatives. As a material, it can be applied in numerous settings where it can reduce environmental degradation, improving our air, water or soil quality. It has a role in the sustainable production of food. It can also serve as a feedstock for many biobased materials, which, when they reach the end of life, can be converted back into carbon and ultimately sequestered or used for energy recovery.

Within the document, the Sustainability principle mentions that “Activity in the bioeconomy should not degrade resilience or biodiversity in the ecosystem.” - perhaps could be expanded upon to go one step further and state that “bioeconomy activity should where possible, improve/enhance resilience or biodiversity in the ecosystem”.

With circularity in mind, potentially consider planning for future mechanisms that allow emerging or soon to emerge biobased products be segregated and/or collected, separate to traditional waste streams, so that the cascading principle can be put into effect, allowing for material re-use or for conversion into bioenergy at appropriate facilities.

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

A reduction in the amount of food waste produced needs ongoing efforts to address. Where food waste is produced, locally available processing facilities (be they biogas plants, composting sites, or more novel approaches such as insect farming etc.) should feature to allow for reduced transport distances, enhanced nutrient and material cycling and increased circularity.

Newly developed processes should be audited or monitored to ensure waste is minimised from any given biomass resource that gets processed, with clear routes for any unused fractions to then go on for the provision of bioenergy where applicable.

Levels of biomass harvest and/or use should be balanced with ongoing, continuous replanting or replacement efforts to ensure demand doesn't exceed supply considerations.

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

Farmers need to be central to the development of the bioeconomy in Ireland. Farmers are the custodians of the land and the guardians of many of the feedstocks which are required

to grow and develop the bioeconomy. This pillar should focus on ensuring that farmers are engaged with in a participatory approach and recognised for their roles in the development of the bioeconomy. For farmer buy in, a fair return is required along the supply chain at all levels.

Other areas of consideration for this pillar should include:

- Forestry planting, harvesting licensing and supply chain considerations.
- Education, upskilling and outreach for those involved in these sectors.
- Provision of assurance as to the viability of growing, harvesting certain crops, perhaps exploring incentives to enable enterprise switches being made.
- Carbon farming and /or sequestration and associated credits at a farm level may assist in driving the switch to more sustainable and regenerative farming practices- this will require government support.
- Ownership of carbon credits needs careful consideration.

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

Again, outreach and education activities, to demystify the emerging bioeconomy sector. To provide clear and concise messaging to local communities and the general public as to the opportunities as well as the need for the development of bio based supply chains and processing facilities within a region, to prevent kneejerk reactions to the development of facilities based on flawed perceptions and misinformation. Ensuring that communities are engaged with well in advance of planning applications is essential to ensure community buy in. Depending on scale of any given development, this pillar could also potentially explore community benefits that could assist in acceptance.

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?

The regional assemblies recent spatial and economic strategy documents all make note of the emerging bioeconomy and from these, the various local authorities development plans are being drafted and published, with input from stakeholders being sought. While this can be seen as encouraging, the reality is that the concepts and the scale of transformation required which will lead to more uptake in the sector are likely still poorly understood, communicated or sufficiently promoted at the local level.

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

Renewable Energy Ireland (REI) produced a report on the provision of 40% renewable heat target by 2030 in which a roadmap was set out how various different renewable technologies may assist in the decarbonisation of various heat needs. The report concluded that the only of the renewable technologies which forms part of the bio economies



cascading principle (i.e., bioenergy) is capable of decarbonising industrial heat requirements. These tend to be high temperature profile heat demands which can be met using solid biomass or indeed biogas/biomethane. The scope for the integration of these for Irish industry is huge and the pillar should seek to enhance the awareness of this among industry stakeholders.

The pillar should also seek to, where appropriate, communicate the benefits that exist from the co-location of complementary activities where the waste from one process can serve as the input for another. Again, these will typically involve the use of various bioenergy technology such as biomass boilers, gasification/pyrolysis or indeed biogas plants. All these technologies offer potential in terms of the development of carbon capture and storage or sequestration, but this will require ongoing efforts to realise, but which could provide alternative financial incentives at such time as carbon removal mechanisms and markets become more developed.

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

Procurement guidelines to include examination of biobased alternatives where feasible.

Examination of tax rates applied to biobased products and services or a time bound reduction on tax rates applied to industries actively switching to biobased production/ consumption models.

Increased levels of support for the integration of bioenergy within industrial processes, similar to Support Scheme for Renewable Heat (SSRH) but where additional incentives are made available where cascading use of a biomass resource can be shown.

Addressing issues within the planning system will be key to mobilising the sector. The planning system needs to distinguish between small scale development and multi megawatt/ large scale industrial systems.

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?

Development of support from Government in the forms of ongoing operational supports such as feed in tariffs, green certificates or obligation schemes, will allow market certainty and assist with the development of a biomethane industry. Similar mechanisms could be



explored for the establishment of further biorefineries capable of processing residues into bioethanol/biodiesel/HVO.

A support scheme similar to the SSRH could be expanded upon to assist large industrial facilities to switch to solid biomass for their energetic requirements.

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

Upskilling those involved in the planting, harvesting, processing, collection and management of biomass resources where appropriate.

Working with Higher Educational Institutes (HEIs) and industry experts to further develop dedicated courses, degrees and associated learnings, to ensure a pipeline of educated workforce capable of servicing the needs of the developing bioeconomy sector, across a wide range of different disciplines- from engineering to biochemistry, agriculture to supply chain and logistics, anywhere the bioeconomy potentially could interface with existing course content.

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

Yes- an emerging bioeconomy sector will require upskilling across a wide range of society.

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?

Advisory systems and representative bodies (such as IrBEA) can play an integral role across a wide range of sectors in knowledge transfer and information dissemination. This can include acting as network enablers, connecting those with an idea or a product/service proposal, with financiers or technical services such as analytical companies who can assist in de-risking any potential investment. They can assist in realising diversification opportunities for farmers and foresters looking to provide feedstocks for bioeconomy facilities through access to expert advice and insight. They can ensure that appropriate checks and balances are in place, to accurately assess and prevent any potential negative impacts or consequences that may arise. They can also assist with communication and outreach activities.

Advisory services and representative bodies could also assist in the development of quality funding proposals, allowing Irish enterprises gain a foothold within the growing international community exploring novel biobased processes and activities.

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



As mentioned, a standalone or dedicated communications pillar might be considered given the scale of the challenge in embedding the idea of a bioeconomy across all sectors of society including Government and industry.

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

- Mobilisation of agricultural/farm based biogas/biomethane sector and the solid biomass sector as a heating source at domestic, commercial and industrial level.
- Continued development of biofuels in the form of bioethanol, biodiesel, biomethane, HVO and sustainable aviation fuel (SAF).
- Exploration of protein production for animal and human consumption from indigenous terrestrial and marine based biomass feedstocks
- Seamless integration of bioenergy technology (where appropriate) with developing bioeconomy/biorefinery processes and facilities
- Enhanced communications strategy across all aspects of society and industry to drive change.