

[Redacted]

23<sup>rd</sup> January 2023

Clerk to the Committee Christy Haughton,

I am a 3<sup>rd</sup> year student at Dublin City University studying Mechanical and Sustainable Engineering. I would like to make a submission for the public consultation of the Bioeconomy Action Plan Consultation and Discussion in order to provide a perspective from the point of view of an engineer very early in their career in sustainability.

I would prefer my personal details not to be published, and would rather not participate in a public session at a committee meeting.

Kind regards,

[Redacted]

Q1. When comparing the National Policy Statement's pillars with the new proposed pillars, there has been a definite positive improvement. The proposed pillars generally seem to be a natural expansion on the original plan but with more specific boundaries. The present-day emphasis on communities strikes as the most noteworthy and welcome addition to the list. No individual pillar can attempt to tackle the issues relating to bioeconomy alone, and in the original framework, community leaders were not indicated to be the highly important stakeholders that they are

Q2. Performance indicators will be very specific to individual pillars. When looking at Nature, Climate & Circular, collecting a representative overview of what products and materials are making their way into the economy. Life Cycle Analyses can be preformed, and over time hopefully a positive trend in scores will be recorded. In terms of Knowledge & Skills, identifying and closing gaps in knowledge in relation to bioeconomy and could be a mark of progress.

Q3. As the bioeconomy is tightly linked with many of the SDGs, the Governance Pillar should ensure that overall progress between all pillars are aligned with these goals. For example the most direct link, improvements to Goal 15: Life on Land, will be immediately connected with any improvements in the bioeconomy. The Irish Bioeconomy Action Plan could take inspiration from these internationally agreed upon goals and implement what is relevant in this country. It is vital each of our pillars reflect that we are part of a wider global community.

Q4. One action that the Research, Development & Innovation pillar could take to help tackle a large issue is the investigation of the food chain in an attempt to better analyse why food wastage occurs in the first place, and what new measures could be taken to avoid it. With the growing population, it is also necessary to consistently monitor any potential threats to crop growth coming from increasingly unpredictable weather changes, and figure out a method to deal with these disasters if they do occur. There could be an international struggle to adapt to the realities of irregular crop production as a result of unprecedented climate behaviour over the next few years. Fresh developments and innovation will be necessary to provide safe and healthy food to the public.

Q5. The most obvious reliable scaling-up of any knowledge base could be done in a collaboration between a diverse range of community members and university experts. Community members will have a deep understanding of the most appropriate bioeconomy needs in their respective region, and university lead studies can best amalgamate and analyse this information in the effort of figuring out what best suits the needs of the majority.

Q6. Recycling waste material is still a huge issue in Ireland. According to Eurostat, only 2% of material resources actually come from recycled waste materials, this was one of the worst results recorded, comparatively within the EU. In order to achieve an efficient utilisation of resources, this must increase drastically. Reusing the valuable supplies available to Earth is an integral aspect of a circular economy. This is a societal challenge as well as an issue for waste management.

Q7. An emphasis on supporting quality goods, made using components that can be repaired with relative ease. Specific to the clothing industry, the trend of fast fashion is particularly

concerning. There needs to be a change of mindset from the public in particular in terms of the 'needs vs wants' debate. Fashion production takes up huge amount of water resources, amongst many other detrimental effects on the environment. Although the large majority of manufacturing for the industry is not based in Ireland, there should be some measures taken to support more sustainable, local clothing businesses here in order to encourage alternatives to online, cheap quality retailers.

Q8. The production of beef has several large drawbacks (land, water and other resource-intensive requirements to produce quality product). With an increasing awareness of the negative effects and a consequential rise in vegetarianism, there should be an increasing trend towards changing the function of land currently growing feed for livestock to the growth of native produce for human consumption. Also concerning the use of farmland, incentives towards the planting of native trees in order to increase forest cover, act as a carbon capture, and protect biodiversity would be of huge help.

Q9. A partnership between members of educational institutions and community leaders is of course desirable to facilitate symbiotically productive progress in terms of bioeconomy. Rural Ireland tends to consist of small, scattered communities that can feel very isolated, especially when compared to Dublin. Communications is an issue in terms of establishing and maintaining relationships. Highspeed broadband rollout has been slow paced and if everyone is to become a part of the bioeconomy solution, modern technology must be available to everyone.

Q10. This question seems rather specific to policy implementation and slightly outside the scope of an engineering student to make comment on.

Q11. The Industry & Enterprise Pillar should endeavour to fulfil the vision of a circular economy. The aim of products involving biomass (e.g. textiles) that can be produced, transported, utilised and recycled on Irish soil is a great example of an industry that could be replicated across different sectors.

Q12. A market that supports entrepreneurial campaigns based in Ireland, using Irish resources that contribute to reducing the number of goods imported from abroad are an effective method of stimulating the economy. For example the seaweed industry has huge potential to not only the cosmetic industry but is a part of the farming industry too. Expansion of the industry would be protecting and utilising Ireland's natural resources.

Q13. Revolutionary economic practices are seem a little beyond the range of an engineering student's capability to make any meaningful comment on.

Q15. Regional Knowledge & Skills are essential to bioeconomy development. Ireland is a member of the EU, and can benefit hugely from the sharing of intellectual resources all across Europe. However, an integral aspect of bioeconomy is recognising the differences in recourses, taking a look at the issues and solutions specific to Ireland. There is no doubt support to be found and inspiration to be drawn from all across EU member states however a skilled Irish workforce needs to take responsibility for out own betterment of the bioeconomy.

Q16. Advisory systems certainly have their place within the decision making process. AI is a rapidly expanding area however at this time, when the technology is not quite there yet, an appropriate role for AI lead advisory packages is as low level guidance. The primary authority on must still be up to the human user, and important deductions advisory systems make should be scrutinised before taking significant action effecting the environment. There are definite limitations to this technology, and there is a challenge and an ethical responsibility on software engineers to ensure advisory AI does not learn to reflect human pitfalls or biases.

Q18. -Agriculture has still the largest national greenhouse gas emission contributor. Progress in the slowing down of beef production and replacement with native produce intended for human consumption.

- Work alongside members of the community to find solutions most effective to that specific region

- Support Irish associations (such as Teagasc) in fulfilling their contribution to the National Bioeconomy Action plans