Growth Energy®
Expanding America's Bioeconomy

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Department for Energy Security and Net Zero
55 Whitehall
London
SW1A 2HP
United Kingdom

Biomasssustainabilityconsult@energysecurity.gov.uk

Thank you for the opportunity to provide input as part of the United Kingdom's (U.K.) Department for Energy Security and Net Zero's efforts seeking views on a common biomass sustainability framework. We hope these comments will be of assistance and we look forward to working with you and the U.K.'s bioethanol industry.

Growth Energy is the world's largest association of bioethanol producers, representing 97 U.S. plants that each year produce 36 billion liters of low-carbon, renewable fuel; 130 businesses associated with the production process; and tens of thousands of bioethanol supporters around the country. Growth Energy represents the leading exporters in the bioethanol industry, helping to support nearly 8.3 billion liters of bioethanol exports to over 60 countries around the world.

For those questions related to forestry biomass or other questions where we do not have an opinion at this time, we have not provided an answer.

Chapter 1 – A Common Sustainability Framework

1. Do you agree that the initial scope of the framework should be limited to bioenergy that is subject to government incentive schemes? If not, please explain why and provide evidence to support your response.
2. Do you agree that the common criteria should be delivered as a policy document and implemented through the relevant legislative or contractual frameworks of each individual biomass policy?
3. Should government consider a legislative route for implementing the common sustainability framework in the future, including expanding for non-subsidised uses? Please provide evidence to support your response.
5. Do you agree that the updated policy guidance document should be published every 5 years? Please provide evidence to support your response or an alternative proposal for review timelines.

Answer to Questions 1-5: We appreciate the efforts by the UK to create a balanced approach and efforts to maintain similarities with other international frameworks and best practices. However, often the document references just the European Union (EU) and its Renewable Energy Directive (RED) as it relates to sustainability criteria used in other countries/globally. While

there are natural, historical, and structural synergies between the UK and EU which makes this understandable, significant feedstocks and fuels under the UK's noted frameworks are supplied by the United States, which also has various laws, regulations and other criteria that support the sustainable practices of U.S. feedstocks. Recognizing U.S. practices and various sustainability standards of other related countries, in addition to the EU, that align with the needs of the UK is important to incorporate throughout this framework's scope.

Given the differences in how feedstocks are treated for on-road compared to aviation, we welcome a review and improvements to align how the same feedstock (such as U.S. bioethanol) is treated, particularly as it relates to accurately accounting for sustainable practices.

While others in the UK are better equipped to respond to the best delivery of common criteria (such as a policy document noted in question 2), we stress the need for flexibility to recognize the differences in feedstocks, production, country of origin, as well as the differences in sectors, such as transportation and power. However, timely review and updating of a policy (and minimizing the need for cumbersome legislative updates) would be beneficial given the dynamic nature of new uses, feedstocks, increased efficiencies, and improved technology.

Chapter 2 – Biomass Feedstock Categories & Definitions

6. Do you agree with the list of key feedstock categories and their definitions in scope of the common framework? Please provide evidence to support your response.

Answer to Question 6: Generally, we agree that the categories outlined are aligned. However, we note that the definition of "energy crops" as being "grown for the purpose of being used as fuel or energy" and "would not normally be used for food or feed" does not necessarily omit the use of U.S. corn bioethanol. In particular, the corn that goes into the U.S. bioethanol production process results in food/feed, bioethanol, and other co-products simultaneously without having to decide which end-product is primary, which is how "other crops" are currently distinguish in Table 2.1. We discuss this further as part of our answer to questions 17-19 as it relates to crop caps.

From the categories, it is uncertain where a product like corn kernel fiber (CKF) would be classified. CKF utilizes the outer shell of the corn kernel to produce cellulosic bioethanol within the current U.S. corn bioethanol process and is increasingly becoming utilized by U.S. bioethanol producers. Yet, how this product fits in the noted definitions is uncertain.

Chapter 3 – Land criteria

Direct land use change (DLUC) – Prohibited land categories

7. Do you agree that the agricultural land criteria should continue to include prohibited land categories in line with existing criteria? Please provide evidence to support your response.

Answer to Question 7: We support risk-based decisions founded on science to address the concerns associated with land use changes in sensitive biomes or recently deforested lands. Rather than setting commodity or feedstock restrictions generally in "prohibited land categories", we suggest setting restrictions from countries of concern where there is a risk to land change that could undermine sustainable development. For instance, feedstocks sustainably grown in the United States or in the UK are unlikely to be from lands otherwise captured within these prohibited categories, yet they are prohibited because of concerns in how those feedstocks are cultivated in other countries.

8. Do you agree that the baseline should be set in January 2008? Please provide evidence to support your response or provide an alternative proposal for when the baseline should be set.

Answer to Question 8: As this date is already established for the UK, maintaining this date would make the most sense. Under the U.S. Renewable Fuel Standard (RFS), which is the overarching biofuels blending policy in the United States, it requires that biomass must be harvested from agricultural land cleared prior to December 19, 2007, and actively managed or fallow on that date.

Prohibited land categories

9. Do you agree with the definitions of the highly biodiverse land categories given? If not, please explain why and provide evidence to support your response.
10. Do you agree with the list of protected highly biodiverse land categories where sourcing is not allowed? Please provide evidence to support your response.
11. Do you agree with the list of protected highly biodiverse land categories where sourcing is allowed if sufficient evidence of no harm to the area of land can be provided? Please provide evidence to support your response.
12. Should other highly biodiverse land categories be added? If yes, what associated sourcing requirements could be included?
13. Do you agree with the definitions of high carbon stock land categories given? If not, please explain why and provide evidence to support your response.
14. Do you agree with the list of protected high carbon stock land categories, where sourcing is not allowed? Please provide evidence to support your response.

Answer to Questions 9-14: While we do not necessarily disagree with these noted definitions or categories, we would suggest considering alternative international criteria to help inform the UK's decision on these categories and their related definition. Additionally, we are concerned about how these criteria would be enforced/verified as it could unintentionally increase compliance costs and complexity that will be passed on to the UK consumer.

In addition to the United States' policies and regulation, an alternative international framework for the UK to consider is Canada's Clean Fuel Regulation (CFR), which includes land use and biodiversity (LUB) criteria to support Canada's sustainability goals. In addition to ensuring only sustainable feedstocks can participate in the program, it allows for efficient implementation for

countries like the United States as well as other countries, like the UK, that have (and enforces) laws and regulations that align with those of Canada covering endangered species, exclusion of high-conservation value lands, biodiversity, etc. (known as "legislative recognition" under the CFR). This flexibility is useful towards ensuring sustainable and economically viable biofuels continue to be utilized from low-risk countries with systems of environmental protection.

Indirect Land Use Change (ILUC)

Crop cap

17. Should the crop cap be set at a sector level subject to sector specific ILUC risk assessments? If not, please suggest what level a cross-sector crop cap should be set at and provide evidence to support your response.
18. If crop caps are set at a sector level, what factors should be included in the sector-specific food competition and ILUC risk assessment? What should this assessment consist of? Please provide evidence to support your response.
19. What factors should be monitored at a cross-sector level to highlight emerging risks regarding food competition and ILUC risks from crop derived feedstocks?

Answer to Questions 17-19: A cap on the amount of bioenergy from crop-derived feedstocks should be upwardly adjusted if it is applied across sectors, such as eligibility expansion into sustainable aviation fuel. Flexibility should also be designed into the program. This would ensure fairness as some types of crop-derived feedstocks may be more prevalent initially and could lead to competition for other fuels. How the UK determines how much fuel counts against the caps should also be adjusted at the sector level.

The consultation document notes, "Competition with food crops has the potential to pose a high ILUC risk where non-agricultural land elsewhere is brought into agricultural production due to *displacement* of existing food and feed crops by biomass production." However, using corn to produce bioethanol does not displace the use of corn for feed. For instance, during the bioethanol production process utilizing corn as a feedstock, BOTH bioethanol AND distillers grains used for animal feed are produced. Without corn bioethanol, this high-protein animal feed in the form of distillers grains would not be produced. Without bioethanol, the cultivation of that land for corn would not change as that corn would still be used as a feed source, but without the added value of bioethanol and other co-products. Additionally, corn directly used as a feed source is not as nutritionally beneficial for animals compared to the nutrient-dense bioethanol co-product of distillers grains, where the starch has been removed.

These coproducts play a vital role in the livestock and food processing sectors, indirectly contributing to the human food supply chain. Rather than diverting food resources, bioethanol production enhances agricultural efficiency by producing fuel and feed from the same crop input. During the U.S. bioethanol production process, biogenic carbon is captured for use in food processing, including for use in carbonated beverages. When bioethanol production dropped during the height of COVID in the United States, the food industry experienced significant

difficulties in sourcing the food-grade CO_2 necessary for their food production; the bioethanol industry was able to help shore up their supplies, further demonstrating the industry's adaptability, and its value in supporting sectors beyond agriculture.

A potential connection between U.S. corn bioethanol and concerns about land use changes have been widely discussed, investigated, and debunked. Data by the U.S. Department of Agriculture confirms that increased U.S. biofuels production has not resulted in cropland expansion nor deforestation. Instead, U.S. bioethanol production from food and feed crops has increased in productivity and sustainability. U.S. agricultural practices continue to improve, resulting in continued yield increases leading to higher output from existing land. Furthermore, it's important to note that there is less U.S. farmland in production now compared to 100 years ago, a point that undermines claims of dramatic land use change put forth by bioethanol's critics. While the United States does import some bioethanol, it is a very small portion of both production and consumption.

We recommend the UK amends what fuel/feedstock pathways triggers volume against the cap for bioethanol derived from corn (or other agricultural feedstocks that produce similar feed products) given co-products do not lead to a displacement. Not only does this meet the criteria under DLUC, but negates the need to utilize ILUC for certain feedstocks.

We recognize that the blanket removal of crop caps may require legislative changes. However, looking at the language related to displacement and finding U.S. corn bioethanol would not count against the crop cap could be a workable alternative. Additionally, highlighting the need to remove ILUC as part of this consultation process would benefit the UK's efforts for a common biomass sustainability framework. ILUC is increasingly seen for what it is: an unscientific and unmeasurable attribute for sustainability that could be better addressed through DLUC and sustainability criteria. Last year, the United States Congress removed the utilization of ILUC in the calculation of greenhouse gas emissions values to determine eligibility under the 45Z clean fuel production tax credit.

High ILUC risk feedstocks

20. How could high ILUC risk feedstocks be identified? Please suggest what factors could be considered and provide evidence to support your response.
21. Should high ILUC risk feedstocks be phased out? If yes, please provide a timeframe and state if it should be at a cross-sector or individual sector level. Please provide evidence to support your response and explain how this could be done in compliance with international rules, e.g. WTO compliance.

Answer to Questions 20-21: Any effort to identify a high ILUC risk feedstock should utilize sound science and metrics as well as stakeholder input for those feedstocks to be accurately identified as well as countries of concern. As noted in the consultation, the EU has identified palm oil as being of high ILUC risk. Yet the EU is undergoing efforts to expand the number of agricultural feedstocks categorized as high ILUC risk. Unlike palm, these new feedstocks are

produced in the United States in addition to other countries where there are concerns on land use change. Thus, classifying additional agricultural commodities as high ILUC risk feedstocks would need to undergo a thorough scientific review by commodity as well as origin. Alternative international policies besides the EU, such as the United States and Canada, should strongly be considered as the UK develops answers to these questions.

Other indirect measures

22. Are there other approaches (beyond those suggested above) that should be considered to limit ILUC impacts of bioenergy feedstocks, in particular with regards to competition with food?
23. Are there any other issues (e.g. social or other environmental) that should be considered as part of the agricultural land criteria?

Answer to Question 20-21: As noted above, many parts of the world are moving beyond ILUC or lowering ILUC calculation for U.S. bioenergy feedstocks (such as the case of the International Civil Aviation Organization). Rather than looking for more ways to utilize ILUC, we suggest differentiating between countries of concern rather than low-risk countries being required to provide economically cumbersome compliance verification or certification. Additionally, we suggest recognizing how sustainably produced agriculture and biofuels in the United States and the UK can positively contribute to the UK's energy, climate, and economic goals, rather than restricting their use – particularly given the co-production of food, feed, and fuel collectively from a single kernel of corn rather than the need to compete with food security. Additionally, by providing multiple market options for crops, farmers have less risk and higher potential income due to the value-added nature of U.S. biofuels. This financial certainty helps ensure that farmland remains in production and not repurposed for other commercial (non-agricultural and non-conservation) uses.

Soil criteria

29. Do you agree that the land on which the raw feedstock was grown should be subject to soil monitoring and management plans? Please provide evidence to support your response.
30. Are there any additional aspects that should be included in the soil criteria? Please explain what these are, how they could be implemented and the rationale for inclusion.
31. Do you agree that agricultural residues should comply with the soil criteria? Please provide evidence to support your response.
32. Should 'other crops' (where the whole plant is used as a bioenergy feedstock) have to comply with the soil criteria? Please provide evidence to support your response, including the benefits and challenges of applying the soil criteria to these feedstocks.
33. Should dedicated energy crops have to comply with the soil criteria? Please provide evidence to support your response, including the benefits and challenges of applying the soil criteria to dedicated energy crops.
34. Should the types of evidence for demonstrating compliance with soil criteria be kept aligned with existing criteria? If not, please outline what changes should be made.

35. Please highlight any specific cost implications to your business/sector in meeting the proposed soil criteria. Please provide evidence to support your response.

Answer to Questions 29-35: Farm management practices vary considerably by state, county, and even among neighboring farms given a wide variety of geological attributes, weather conditions, microorganisms, etc. Needed inputs, soil quality, yields, types of crops, etc. also vary considerably. There are significant federal and state laws, regulations, and programs that cover agricultural production in the United States, including that the production of biofuels does not lead to land use changes. Requiring soil criteria would require significant hurdles and logistical requirements to trace back from a shipment of bioethanol to a specific farmer and their specific farming practices.

U.S. bioethanol biorefineries procure their feedstocks from many farmers, production is diversified, product is commingled, farmers are separate entities from bioethanol production, competing prices at elevators/storage change the supplier/purchaser dynamic, etc. Placing requirements to verify soil criteria would place an unnecessary burden on farmers and producers which would result in increased compliance and tracing costs, if it would even be available. As noted in the consultation document, farmers are not aware of where their corn or where the bioethanol will be supplied to.

U.S. farmers are the most productive and sustainable producers in the world – with many inheriting family farms with goals to pass along their farming operations to their own children and grandchildren. Rather than seeking to increase requirements on sustainable producers in the United States or UK, we suggest restricting biofuels or their feedstocks from countries where there are sustainability risks.

Application of land criteria to non-bioenergy use

73. How would the land criteria, as currently formulated, be applied to biomass feedstocks regardless of their end use (including non-energy uses)?
74. Would the land criteria need be adapted to mitigate potential negative environmental impacts associated with non-energy uses of biomass? Please provide evidence to support your response.
75. If applied to non-energy uses, how could government ensure that the application of land criteria does not create unintended barriers for sustainable non-energy uses of biomass?

Answer to Questions 73-75: There is significant opportunity for bioethanol and other feedstocks to produce bio-based products such as chemicals and materials, thereby further displacing the need for fossil fuels. Land criteria and other verifications applied to countries or feedstocks of low-risk, such as U.S. corn bioethanol, has limited its ability to meet emissions reduction goals in certain markets (including its ability to displace conventional jet fuel in both the UK and the EU). Biomass feedstocks for non-energy use is a burgeoning industry, yet very price sensitive and is only just starting to grow. Limiting feedstocks or putting onerous requirements or certifications would only serve to cool the uptake of bio-based products, particularly as market uptake is often price sensitive. We suggest continuing to let this industry further develop prior to

further requirements that could unintentionally stunt growth in fossil-fuel alternatives or consider measures to enable their use.

Chapter 4 – GHG Criteria

78. Do you agree that the proposed life cycle parameters can be used to give an appropriate representation of the bioenergy LCA emissions? Please provide evidence to support your response.

Answer to Question 78: We agree that the proposed life cycle parameters could be used and appreciate the utilization of CCS as well as the reference to sustainable agricultural techniques such as cover crops, no-till, etc. How those parameters are relayed into modeling for greenhouse gas calculations gets more complicated. Incorporating sustainable agricultural practices into LCA emissions should be voluntary to reduce the emissions profile. Voluntary practices would support increased use of those techniques and recognizing that some landowners are already utilizing those practices. Further, not all practices are available on all lands so flexibility on how these practices are incorporated into an LCA are important.

We also suggest an addition to this list of parameters. Given the multiple co-products produced during the bioethanol process, not all emissions from a biorefinery should be attributed to bioethanol. While this is partly addressed for captured carbon as part of the system boundary discussion in the consultation, other products such as distillers grain for animal feed, corn oil, etc. are not seemingly incorporated into the consultation.

79. Are there additional parameters that should be considered? Please provide evidence to support your response.

Answer to Question 79: We recommend replicating parameters utilized within the GREET model that is managed under the U.S. Department of Energy. This model is used across sectors, widely recognized as a leading model, used in international calculations (such as the International Civil Aviation Organization) and incorporates many of the parameters noted in the consultation document. Additionally, parameters and modeling of sustainable agricultural techniques are ongoing by the U.S. Department of Agriculture and other U.S. agencies as part of finalizing guidance associated with the 45Z clean fuel production tax credit.

ILUC emissions within GHG criteria

81. Do you agree that there should be a requirement for ILUC values to be reported separately for crop-based feedstocks by all future biomass policies? Please provide evidence to support your response.

Answer to Question 81:

The International Energy Agency (IEA) published a report in July 2024 that looked at ILUC and noted that: "…land use change (when bioenergy growth generates an indirect expansion of cropland into high carbon stock land elsewhere) deals with international economic dynamics that need to be modelled and cannot be measured or verified. Indirect land use change is the main cause of disagreement around biofuels GHG accounting, due to the **high uncertainty of results and the risk of arbitrariness when attributing an indirect land use change** value to a certain feedstock and biofuel pathway. This calls for alternative policy approaches.[1]"

ILUC values should not be incorporated in future biomass policies, rather concerns on land use should be addressed in policy and sustainability criteria. Over the last decade, the models and underlying data sets that have been used to estimate land use change have been greatly refined, resulting in a clear downward trend for U.S. corn bioethanol. Continuing to include or adding ILUC to future policies ignores scientific trends and the need for transparent policy.

82. How could the GHG criteria life cycle assessment be expanded to include accurate ILUC emissions in the future? Please provide evidence to support your response.

Answer to Question 82: Notwithstanding our earlier noted concerns on ILUC, the use of DLUC, ILUC and crop caps for U.S. corn bioethanol is redundant as all policies claim to address concerns on food security as a result of land use change. This doubly penalizes corn and other food-based feedstocks without any recourse for participation if able verify the fuel/feedstock were sustainably produced. Utilizing DLUC with sustainability criteria (including allowing for eased imports from low-risk countries such as the United States) would more accurately and thoroughly address concerns associated with ILUC and crop caps

Chapter 5 – Monitoring Reporting and Verification

Mandating reporting of biomass country-of-origin

100. Do you agree that biomass feedstock country of origin reporting should be mandatory, with certain exemptions? Please provide evidence to support your response.
101. Please state which feedstocks should be exempt from country of origin reporting? Please provide evidence to support your response.

Answer to Questions 100-101: As noted, we believe that rather than ILUC or crop-caps, restrictions should be placed on countries where there are concerns on sustainable practices. The United States sustainably produces bioethanol and its feedstocks; and we are increasingly improving our efficiencies in the production of corn and bioethanol every year. While generally having a country-of-origin reference can be good, we do hope that any effort for doing to so will minimize burdens on U.S. producers and exporters, and the use of a country-of-origin could help

[1] https://www.iea.org/reports/carbon-accounting-for-sustainable-biofuels/executive-summary

to alleviate pressure on non-risk countries' biofuels and provide some type of benefit under the crop-caps, ILUC, etc.

Conclusion

127. Do you consider there to be any longer-term implications that have not already been addressed in this consultation, including costs to sectors, business, or consumers?
128. Do you have any further comments or suggestions across all policy proposals included in this consultation in relation to the objectives (set out above and in chapter 1), including on the costs and practicalities.

Answer to Questions 127-128: Alignment into a common biomass sustainability framework has an opportunity to look objectively and compare which policies are succeeding and which ones need to be tweaked for success. The U.S. bioethanol industry has proven, and continues to prove, its ability to lower GHG emissions while delivering jobs and economic benefits to American workers and farmers. These benefits can also be extended to the U.K. bioethanol industry with expanded market opportunities. The sustainable production and use of value-added agricultural commodities in the United States have supported farmers, revitalized rural communities, created jobs, increased local tax revenue, and generated economic savings for consumers when filling up their cars. The establishment of bioethanol biorefineries has created a steady and dependable market for grains. This has driven a new generation of people to build careers in farming, and rejuvenated communities. Jobs and prospects offered by bioethanol facilities have strengthened agricultural economies, providing many positive influences on rural life.

Thank you for your consideration of our comments as you evaluate responses and next steps for the Common Biomass Sustainability Framework Consultation. Should you have any questions, need more information, or wish to discuss these proposals further, please contact Emily Marthaler, Growth Energy's Director of Global Policy, at emarthaler@growthenergy.org.

Sincerely,

Chris Bliley
Senior Vice President of Regulatory Affairs
Growth Energy