BIO-BASED AND BIODEGRADABLE INDUSTRIES ASSOCIATION

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Government policy relative to the development of the bio-based and biodegradable industries sector in the UK

Executive Summary

1. The BBIA examines the various UK Government strategies published since 2017 which relate to bio-based and biodegradable plastics
2. BBIA underlines the apparent strategic support for the production of bio-based materials in the UK and for the separate collection and treatment of certified biodegradable/ compostable products post consumption.
3. BBIA highlights the significant development of the industry in the UK since 2017 including as a result the funding for research driven through UKRI
4. BBIA finds however, that the transposition of strategic direction into policies is often contradictory and detrimental to the bio-based and biodegradable industries sector.
5. Policies so far, since 2020, have been implemented which either disregard Government strategies or are announced that intend to over-turn Government strategies.
6. BBIA calls upon Ministers, the Civil Service and Parliamentarians, to respect the strategic trajectory laid down by Governments since 2017 when implementing policy decisions, thus supporting the industry and kick-starting major investments into the UK economy.

Since 2017 the UK Government has published several documents providing a strategic view of the future of the UK environment as well as its industrial and economic development. These can be listed as follows:- (this is not a comprehensive list but one that serves the purpose of this paper).

Industrial strategy 2017[1]

Bioeconomy Strategy 2018[2] and since withdrawn

25 year Environment Plan 2018[3]

Waste and Resources Strategy 2018[4]

Innovation Strategy 2021[5] (which substituted the Bioeconomy Strategy)

Net Zero Strategy 2021[6]

Building Back Better Strategy 2021[7]

[1] https://www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future

[2] https://www.gov.uk/government/publications/bioeconomy-strategy-2018-to-2030

[3] https://www.gov.uk/government/publications/25-year-environment-plan

[4] https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england

[5] https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it

[6] 2021 https://www.gov.uk/government/publications/net-zero-strategy

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/968403/PfG_Final_Web_Accessible_Version.pdf

Additionally, the UK Government has introduced measures to reduce plastic consumption through taxation, the Plastics Tax https://www.gov.uk/guidance/check-if-you-need-to-register-for-plastic-packaging-tax

The Government has also helped create, funds and continually participates in the WRAP UK Plastic Pact. (https://wrap.org.uk/taking-action/plastic-packaging/the-uk-plastics-pact)

Within each of these strategies we find several references to the need to innovate, to promote biotechnologies and to reduce the use of plastics, substituting them in certain applications by bio-based, biodegradable and compostable plastics. We find the reference to the capacity of the UK to use bio-based renewable resources as a way of reducing the consumption of fossil fuels.

Such phrases can be found in the above documents:

The Industrial Strategy

"We also need to be clear where our distinctive advantages lie. We will build on our existing strengths, from cybersecurity, machine learning, microelectronics design and composite compound chip technology to *biotechnologies* and life sciences such as genetics and cell therapies. At the same time, we must develop new strengths in emerging sectors. We must do this as a partnership between businesses, scientists, investors, educators and policy makers to take full advantage of the transformational potential of these trends to improve people's lives, their work and the nation's productivity."

The Bioeconomy Strategy

"With initiatives such as the UK Plastics Pact setting ambitious targets for all plastics to be reusable, recyclable or compostable by 2025, a strong innovation-based supply chain can create *a thriving circular bioeconomy* to help us realise this potential."

The innovation Strategy

"As well as enabling cheaper and greener products, engineering biology can dramatically transform the manufacturing processes that underpin existing industries. This will help lessen our dependence on fossil fuels and simplify global supply chains, shifting us from an oil-based economy towards a bio-based economy. *Where fossil-derived fuels or plastics are required, biomanufacturing will deliver bio-based and waste-derived alternatives in 80% of the cases by 2035."*

The 25 Year Environment Plan

The Plan lays out an ambition to achieving zero avoidable plastic waste by 2042. Within this ambition the Plan states:

"Re-using and recycling plastics is critical, and also *reduce our reliance on fossil fuels* for the production of virgin plastics. These changes would also stem the damaging flow of plastics into the environment, where they devastate wildlife and the wider natural environment. Reducing the plastic flow into our seas would also reduce the risk of toxins being transferred up the food chain."

This will be achieved in part by

" Encouraging the development of bio-based, biodegradable and environmentally-friendly plastic through the Bioeconomy Strategy. "

Net Zero: Build Back Greener

Whilst making little specific reference to plastics, bioplastics or other materials the paper does talk about the need to ensure supply chains for the chemical sector, many of which are already or could be bio-based.

"For example, we will need to ensure we have access to *a diverse range of sources of chemicals, given they feed into 95% of our manufacturing base.* As we move forward, where possible, government will provide more visibility around planned deployment cycles to increase the opportunity for suppliers to invest in long-term production, infrastructure, and training. "

The Waste and Resource Strategy

This document goes into considerable detail regarding the use of bio-based and biodegradable and compostable materials stating among its key strategic ambitions:

"Our Strategy will contribute to the delivery of **five strategic ambitions:**

To work towards all plastic packaging placed on the market being recyclable[8], reusable or *compostable* by 2025; (NB. 2025 is 3 years away.)
To work towards eliminating food waste to landfill by 2030;
To eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan;
To double resource productivity by 2050; and
To eliminate avoidable waste of all kinds by 2050."

Further the document states the Government

"(We) want(s) comprehensive and frequent waste collection systems that capture as much material as possible, promote householder and business participation, *and ensure that high levels of quality recyclable or compostable materials are available for reprocessing"*

In the document the Government also states:

"*Compostable plastics are plastics that meet specific composting standards (for example EN13432). Not all biodegradable plastics meet these standards and so can't be sent for composting. Compostable plastics can also be sent to AD, but operators of wet AD systems must include a pre-treatment composting step*."

Further the Government, by joining the Ellen MacArthur Foundation New Plastics Economy Global Commitment, declares that:

"In signing up the Government has endorsed a common vision and committed to put ambitious policies in place well ahead of 2025 in key areas: (1) elimination of problematic or unnecessary plastic; (2) encouraging reuse models; (3) incentivising the use of reusable, recyclable, or *compostable plastic*; (4) increasing collection, sorting, reuse, and recycling rates, and (5) stimulating demand for recycled plastics. **We hope to inspire other countries to follow our lead and commit to action in these 5 areas".**

Building Back Better Strategy

This document makes no specific reference to materials or to chemistry in general. Yet under the Chapter Innovations the Government does state that

"We are committed to regulatory reform to accommodate *new processes, products and business models, and provide a supportive environment to dynamic entrepreneurial business."*

WRAP have published guidance on the use of compostable packaging in 2020[9] to which the Government, as members of the Plastic Pact, have contributed. The guidance follows the logic of the Government's strategic view on compostables and provides a logic to their use, albeit in limited applications e.g., food service where reuse is

[8] In the context of the UK Packaging Regulations, organic recovery (composting) of packaging is equivalent to material recovery (recycling).
[9] https://wrap.org.uk/resources/guide/compostable-plastic-packaging-guidance

not practical. Further Plastic Pact work has since found that compostables are best used in making tea and coffee bags, potentially coffee pods, sticky labels, and some packaging/bags. This guidance has also been delivered with the contribution of PP members, including most of the major UK brands and retailers. The Plastic Pact is unlikely to publish positions without Government agreement.

These government policies (and the WRAP guidance) clearly seem to favour technological innovation, the development of bio-based sources for chemistry, the production and use of bio-based and compostable plastics and their role in waste management systems. Indeed, were one to be a foreign investor looking to invest in the UK one could look at the rapidly developing global markets for bioplastics and consider the UK to be welcoming to those investments.

The Government has also put money into the development of this sector through UKRI which has invested millions in UK companies perfecting the processes to manufacture innovative, bio-based materials. These include success stories like BIOME, NOTPLA, OCEANIUM and many others. The European Union, through H2020 and BBI JU has funded hundreds of millions of euros in similar development involving UK companies and researchers, with this association (BBIA) involved in two such projects in recent years. The spending on such industries is a logical response to the strategic view Government has taken of them and should lead to support through specific interventions e.g., legislation, green public procurement.

Indeed, two elements support the Government's vision, as we enter into 2022 and the critical assessment of policies which are due to be announced by DEFRA cover waste and resources. The first is the burgeoning number of start ups investing in the UK to develop and produce these materials. The second is the uptake from major brands of innovative, compostable and bio-based packaging to reduce their carbon footprint as well as to improve the chances of better waste management once discarded. Companies like Wool Cool Ltd in Staffordshire have won the Queen's Award for Innovation while their Managing Director, Josie Morris, has been made an MBE. Wool Cool use what would otherwise be wasted fleeces from UK sheep farmers to make packaging insulation that are totally natural and compostable.

BIOME have invested in the production of bio-based plastics that are now being exported to the USA as well as used in the UK as tree guards, substituting tree guards made from plastics that left residues on soil and land when their purpose finished. OCEANIUM are using seaweed (as are NOTPLA) to make plastics that will be extremely useful in the substitution of unrecyclable products like sauce sachets and others.

Major brands like Unilever (teabags), Mars Wrigley and Nestle (sweet wraps), Lavazza (compostable coffee pods), and hundreds of others now use compostable plastic in some of their UK products. Meanwhile major retailers like COOP, ALDI, sell compostable carrier bags intended for repurposing as food waste collection bags whilst WAITROSE and LIDL provide compostable fruit and vegetable bags with the same end of life intention.

Given Government strategies, innovation steaming ahead, and the market uptake that there is of compostable packaging in the UK, the Government should be looking to consolidate this movement to achieve its own strategic aims as laid down in the above cited strategies.

In fact, when these strategies are put into the development of legislation, however, barriers to prevent the development of the industrial sector have been put into place.

We cite four examples.

1) The Plastic Tax[10]
2) The Waste and Resources Strategy on collection consistency and EPR systems.[11]

[10] See above reference
[11] See above reference

3) The proposed ban on Single Use Plastics 2021-22[12]
4) The Government's consultation on standards of biodegradable and compostable plastics 2019[13]

All are, in their current elaboration, in conflict with declared Government strategic thinking and are unfavourable to the industry that had hoped to invest in the development of bio-based and compostable plastics in the UK.

The Plastic Tax

The Plastic Tax, unlike Government strategies, makes no distinction between bio-based and compostable plastics and conventional plastics. HMT have not acknowledged the scientific evidence that a plastic which has composted into water, CO2 and fibres cannot be recycled back into making new compostable plastics, therefore cannot claim to achieve a 30% recycled content in order to avoid paying the tax. This means, paradoxically, that all compostable plastics will be subject to the taxation even those supplied by local authorities to help their citizens recycle food and garden waste. BBIA has argued that as the content of a (compostable) bio-based plastic is organic carbon that is recycled through composting, where compostable packaging contains at least 30% renewable carbon, that should be considered the same as a 30% recycled content.

The Waste and Resources Strategy on collection consistency and EPR systems

The strategy, as cited above, was seen as a commitment to facilitate the growth of the use of compostable packaging as these materials are a) included in the five strategic ambitions b) by stating that recycling of them should be encouraged.
Yet after the second round of consultations (results of which are imminent), DEFRA has already made it abundantly clear that a) compostable packaging should not be collected separately or with food waste b) that the EPR costs for compostable packaging will therefore be at the highest rate because the materials will be deemed unrecyclable.

So, whilst around one third of compostables are already composted, i.e., organically recycled, other materials for which claims of recyclability are made without supporting data, will pay a lower fee and may be collected by local authorities. Compostable packaging, already more costly than conventional plastics (mainly due to the favourable tax and policy conditions placed on the fossil fuel industry), will be hit by higher costs, further reducing their competitiveness.

So, whilst the treatment infrastructure for compostables is abundant and nationwide (circa 45 IVCs almost all currently accepting compostables) DEFRA seems to ignore this important waste treatment solution.

The proposed ban on Single Use Plastics

The consultation closing 12 February on banning certain SUP again makes no distinction between conventional plastics and bio-based and compostable plastics. Yet, were it to follow the logic of Government strategies, it would and so would those issued by Scotland, Northern Ireland and Wales. Among certain items proposed for banning are catering products- plates, cutlery- which are widely used, collected and recycled, using compostable plastics. The huge advantage of these products is that they can be collected and composted along with the food waste they inevitably contain or are stuck to or are contaminated by. Companies like Vegware and BioPak in the UK have organised their own collection routes ensuring a very high volume is returned to composting at plants like ENVAR and KEENAN. These routes cover not just thousands of small businesses but also the Parliamentary Estate and Tesco head office. Moreover, there is no evidence that compostable plates and cutlery are contributing to littering, the motive behind the ban.

[12] https://www.gov.uk/government/consultations/single-use-plastic-banning-the-supply-of-commonly-littered-single-use-plastic-items
[13] https://www.gov.uk/government/consultations/standards-for-biodegradable-compostable-and-bio-based-plastics-call-for-evidence

Were Government strategies to be believed, it is precisely in these uses that compostable plastics come into their own, reducing plastic waste that is difficult to recycle otherwise, improving the interception and quality of food waste, returning organic carbon to soil.

The Government's consultation on standards of biodegradable and compostable plastics

The responses published by DEFRA and BEIS to the consultation on standards was one which has very much worried the industry making bio-based and compostable plastics.
It states that the standards around compostable plastics are unclear e.g., the EN13432. Yet the Government's own officials, both from DEFRA and BEIS, have been sitting on the BSI Standards committee for 22 years since the standard was introduced and have not once raised a single objection to it. Indeed, UK Government officials and industry experts, including the composting industry from the UK and all of Europe, helped write the standards. The review of those standards has been open three times and is currently open, without a single objection to them being made. So, the standards are clear, valid and fit for purpose, and after 22 years of experience, known globally.

Conclusion

UK policy implementation needs to be in line with UK Government strategies. Only then can this industrial sector help build back better the UK Economy and allow the UK to become a world leader in green and truly sustainable development.

To support the UK in this endeavour, this industry:-

1) Is ready to invest £500 million in the short term to build capacity in the UK
2) Makes products which are increasingly in demand, a demand that has doubled in the last two years
3) Reduces the burden of some unrecyclable plastics in certain applications
4) Increases and improves the capture of food waste at a time when every council will be obliged to provide separate food waste collections
5) Reduces contamination of food/garden waste collections from plastics, a major industrial cost and environmental burden.
6) Has an available and abundant treatment infrastructure already accepting its materials
7) Wants to contribute through EPR to develop and improve that infrastructure
8) Adheres to rigid and costly standards which the Government itself has helped develop and which are applied globally since 2000.

Our policy document[14] presented at the House of Lords on November 24th 2021, contains the policies BBIA believe are needed in order to achieve the targets for our industry which the Government has solemnly laid out in its strategies over the years.

[14] https://bbia.org.uk/wp-content/uploads/2021/12/November-2021-the-role-of-the-bioeconomy-in-the-climate-change-debate.pdf