

Bioplastics in Europe

A Tangible Example of the Potential of the Bio-based Economy

Den Haag, 2 May 2011

Lange Voorhout 53
2514 EC Den Haag
The Netherlands
T +31 70 345 62 10
F +31 70 345 69 08
W www.pa-europe.com
E info@pa-europe.com

To Whom It May Concern,

The following document is a submission to the European Commission's public consultation on the "bio-based economy for Europe: state of play and future potential" by PA Europe, in consultation and collaboration with participants in the Dutch Bioplastics Value Chain.

The European Union has taken an important step towards ushering in the era of low-carbon, resource efficient, sustainable and inclusive economic growth in Europe with the decision to formulate a "European Strategy and Action Plan on the bio-based economy by 2020". As the European Commission rightly acknowledges, the bio-economy has the potential to contribute not only to tackle global problems such as climate change, CO2 emissions reduction and sustainable economic growth, but also to furthering research and innovation excellence in Europe, and more sustainable agricultural policies linked to regional and rural development.

Within the bio-based economy, bioplastics have the potential to deliver many of the proposed benefits of the bio-economy. Bioplastics made from renewable (non-fossil) raw materials have multiple advantages, such as a lower carbon footprint than traditional plastics and reducing dependency on fossil fuels. Bioplastics are an innovative technology, one in which Europe has a well-established position to build upon and the innovative materials being developed can contribute to significant resource reduction and reliance on other synthetic materials. The production and use of bioplastics directly contributes to the reduction of CO2 emissions and the dependence on a carbon-intensive economy. The development and expansion of the bioplastics industry in Europe, and the interconnected shift in agriculture towards the supply of renewable (non-food) feedstocks for biomass, can contribute to the on-going shift of European agricultural policy towards more sustainable and environmentally friendly activities and provide excellent new business and innovation opportunities for European agriculture.

This contributes not only to reducing the environmental impact of European agriculture, but also can provide an economic and employment stimulus to rural and regional development in Europe. This will harness Europe's global expertise not only in the agricultural sector, but also in industrial sectors of the economy, such as the chemicals and plastics industries. Europe has long been a well-established centre of excellence and innovation in agriculture, the chemicals industry and biotechnology. Interconnected areas including supply chain innovation and integrated transport and logistics networks demonstrated by, for example on-going initiatives in the transport sector in The Netherlands such as at the Port of Rotterdam. The development and support of the bioplastics industry will provide new business opportunities and innovative industrial developments, in a material that represents high added value, as compared with other potential uses of biomass and bio-based feedstocks.

As a world leader in the bio-based economy, Europe has the opportunity to become the leader in bioplastic technology, production, application and use. In July 2010 the European Bioplastics

Association stated that by 2020 at least 5% of Europe's plastic needs could be met through bioplastics. This would constitute a tenfold increase of bioplastics' share of this quickly growing market in 2010. Longer term bioplastics have the potential to take a much higher share in the total plastic market, with some researchers estimating a share of 90% as being possible. Through this, bioplastics can contribute to an overall objective within European society of resource reduction, through for example product replacement such as outlined above, where viable.

When considering increasing support for, and stimulating, the bioplastics industry and bio-based materials in Europe, it is also necessary to take into consideration the impact of an absence of political and policy support by national and European policy-makers. Europe has the opportunity to establish itself as a world centre of the bioplastics industry and to fail to support the development of this sector could result in the relocation of innovative industry actors with a commitment to more sustainable and renewable products to other regions, with a consequent impact on the industry in Europe.

The European Union and its Member States excel in supporting research and innovation. In line with the EU's emphasis on innovation as set out in the Innovation Union and the Europe 2020 strategy, and in order to translate this success into demonstrable industry achievements, more needs to be done to support the bringing of new and innovative products, such as bioplastics, for example through the use of demonstration or pilot projects and through up-scaling of existing initiatives. The high value-added nature of bioplastics should ensure that following this initial stimulation further structural support may no longer be required.

What is more, bioplastics are an already existing and are a tangible demonstration to society and consumers of what the transition to the bio-based economy means for them in practical terms. Bioplastics have proven themselves to be technologically developed enough to replace the use of conventional (fossil-based) plastics in many applications. Innovative small and medium sized businesses in Europe are leading the way in the uptake of bioplastics, and have succeeded without recourse to extensive structural support. Key brand leaders – such as Unilever, Heinz, Coca-Cola, Danone, Frito-Lay, Procter and Gamble and many others – have expressed interest in, or have already committed themselves to, the long-term shift to using bioplastics and bio-polymers for their product packaging.

These companies are making these commitments apart from their recognition of the importance of the sustainability of their business actions and of limiting the environmental impact of their products and activities, and will be crucial actors in influencing the expansion and up-scaling of the industry's production capacities. They view the use of bioplastics over traditional plastics as a way through which to achieve these goals. It is also encouraging to note that bioplastics are being increasingly used in more durable applications such as cars, home appliance, cosmetics, mobile phones, office machinery, children's toys and building materials to name a few – companies include Sony, Toyota, L'Oréal, BAM, Ford, UNGA Toys. The engagement of such companies from around Europe and the world demonstrates the market potential of bioplastics and willingness to innovate.

There are issues related to bioplastics that do need to be addressed to fully fulfil their potential, and these questions also relate to the development of the broader bio-based economy. They include appropriate standards and labelling and particularly access to raw materials and ensuring that there is no conflict between the sourcing of raw materials intended for the bio-economy and those intended for the food industry, and informing and educating crucial determining stakeholders at the end of the value chain such as consumers and the waste management industry.

Actors across the value chain – which refers to all the activities and services that bring bioplastics from conception to end use in a particular industry, from raw material supply to production, processing, wholesale, retail and finally disposal – in Europe are collaborating to ensure that the issues affecting all steps in the value chain are taken into consideration in policy recommendations. Taking a “value chain approach” to economic and social development means addressing the major constraints and opportunities faced by businesses at multiple levels of the value chain and addressing them in a manner that brings mutual, both economic and social, benefit.

To this end and on the initiative of PA, participants in the Dutch Bioplastics Value Chain, ranging from raw materials suppliers, through to bioplastics manufacturers and converters, to leading brand owners and retailers – and supported by European actors such as the European Bioplastics Association and the Ministry for Economic Affairs, Innovation and Agriculture (EL&I) of The Netherlands – have over recent months collaborated to identify the key constraints/issues at the political and regulatory level that need to be addressed to ensure that bioplastics fulfil their potential in Europe.

These key issues are:

- **Access to feedstocks**
 - Easing the access of the European chemical industry to competitively priced agricultural feedstocks and biomass, sourced either from inside or outside the EU in sufficient quantities and quality
 - Re-orienting agricultural production towards the production of non-food feedstocks for the bio-based economy instead of only focusing on crops for primary energetic use
 - Support for research and innovation related to the development of more sustainable and more productive ways of feedstock and biomass production

- **Financial and political support/endorsement**
 - Clear political commitment and support for the bio-based economy as the only future alternative to the current carbon-dependent economy, and as providing many other benefits to the European population (economic, social and environmental). Governments and policy-makers can work to establish and encourage market pull towards bio-based products as part of this goal, in order to support and stimulate the industry within Europe, through for example incentivisation of bio-based materials or industries and other policy tools.
 - Acknowledging the existing and potential contribution of bioplastics as a demonstrable alternative to traditional petrochemical plastics at every political level, through inclusion in the forthcoming communication of the European Commission on the inclusion of the bio-economy concept in the Innovation Union of the “Europe 2020” strategy.
 - Setting clear rules and a clear and coherent regulatory framework that will encourage and support the continuation of this innovative industry in Europe.
 - A number of countries have already taken the lead in efforts to increase the visibility and support of the bio-based economy in Europe, an example being the Memorandum of Understanding on the bio-economy signed by Germany, France, The Netherlands and the Flanders region of Belgium. Other stakeholders, such as national and EU authorities, should be encouraged to support such initiatives.
 - Governments at the national and European level have key role in demonstrating to consumers, for example through publicity campaigns or incentivizing the uptake and

development of bio-based products through public procurement policies. The USA has established a “biopreferred” programme procurement programme mandatory for federal authorities since 2002. This program could serve a role model for a similar to be developed programme in the EU.

- **End-of-life and waste management**
 - Among the issues that will allow bioplastics industry to fulfil its potential is ensuring that the requisite infrastructure for properly dealing with bioplastics is encouraged and created where new infrastructure may be required (such as in compostability, anaerobic digestion, etc.). Bioplastics may provide new opportunities for more closed-loop product cycles, supporting the re-use and the use of recycled and renewable materials, which in turn can contribute towards the shift to a “zero-waste” economy.
 - Recommendations that have previously been made – such as those relating to the necessary access to waste management infrastructure – must be seriously taken into consideration, including those for example of the Lead Market Initiative (LMI) for bio-based products. The LMI established relevant and important recommendations for the bio-based sector.
 - However, these recommendations must act only as the basis of the forthcoming strategy, which needs to go beyond such recommendations and detail a structured framework for mainstreaming innovative technologies such as bioplastics into the future European bio-economy.

- **Consumer awareness-raising and education**
 - Bioplastics are a demonstrable example of the bio-based economy that can be utilized by politicians and policy-makers to educate and inform consumers on the bio-based economy. This opportunity should be taken by Governments and the EU to clearly and simply show what the bio-based economy will mean to consumers and citizens in practical terms, through supporting its development and raising awareness as to the potential of bioplastics.
 - Consumers occupy the key role in the acceptance and success of the bio-based economy in Europe. They need to be properly informed as to what the bio-based economy will mean in real and practical terms for them in their daily lives, and the importance of initiating the shift to a low-carbon economy in Europe.
 - Governments, brand owners, retailers, consumer groups and NGOs need to work together to properly inform consumers.

The cooperation demonstrated by initiatives such as the Dutch Bioplastics Value Chain shows that industry players across the spectrum are deeply involved and committed to ensuring that Europe becomes a centre of research and innovation excellence in the bioplastics industry and within the broader context of the bio-based economy. The potential contribution of this sector to future sustainable economic growth and development in Europe will be fulfilled through the joint efforts of industry and policy-makers work together to ensure that a coherent and supportive regulatory regime is put in place.

At present Europe has the established networks for research and innovation but future funding needs to be secured, with ongoing agricultural and waste management reforms in Europe there is no reason why sufficient raw materials to feed both the population and the bio-economy will not be available, furthermore European consumers are conscious of the need to adopt more sustainable consumption patterns, and leading industry players are ready and willing to make bioplastics a

tangible European success delivering innovation, jobs and real added value - both economic and social.

On the basis of the above the following companies, organisations and individuals strongly believe that the specific inclusion of bioplastics as a key opportunity and deliverable of the proposed “European Strategy and Action Plan on the bio-based economy by 2020” will be a ‘win-win’ for all involved stakeholders.



The following stakeholders are also signatories to the submission paper:

Dutch Bioplastics Klapwijk

Professor Mark van Loosdrecht, Group leader Environmental Biotechnology, Department of Biotechnology, Faculty of Applied Sciences, Delft University of Technology

The Dutch Bioplastics Value Chain

The Dutch Bioplastics Value Chain has been established to bring together all relevant actors in the bioplastics ‘value chain’, from raw materials producers and distributed, to those manufacturing end products destined for consumers and brand owners, through to retailers, waste management stakeholders and leading academic researchers in order to address the constraints and opportunities faced by these actors. The Dutch Bioplastics Value Chain includes both SMEs and leading European multi-national corporations and is envisaged as acting as showcase initiative within the context of on-going actions at the national and European level, including the EU’s strategy and action plan towards a sustainable biobased economy by 2020. The Dutch Bioplastics Value Chain has met already in March and April of 2011 to assess the opportunities and constraints facing the industry and to work

together towards a common approach for the success of the industry across the value chain. The following organisations and stakeholders have to date participated and been represented in the initiative:

Avantium; Bio Futura; CSM; Synbra; de Bijenkorf; Desch Plantpak; Dow Benelux; DSM Engineering Plastics; Dutch Bioplastics Klapwijk; Dutch Polymer Institute; European Bioplastics Association; Heinz B.V.; Ministry for Economic Affairs, Innovation and Agriculture (EL&I) of The Netherlands; Mirel; Telles; Moonen Packaging; NatureWorks BV; Novamont S.p.A.; NPSP Composieten; PA Europe NV; The Biorenewable Business Platform; Purac; Raad Nederlandse Detailhandel; Rodenburg Biopolymers; Royal Cosun Biobased Products; Sabic; Delft University of Technology (TU Delft); Unga Toys; Vroom & Dreesmann (V&D); Wageningen University and Research Centre (WUR); the nova-Institut; BIONND; Port of Rotterdam; Dutch Waste Management Association (DWMA); Bioresins.eu; NVC Netherlands Packaging Centre; Belgian Biopackaging Association; Innovia Films; The Coca-Cola Company; Nederlands Normalisatie-instituut (NEN)

For more information, please contact:

David Webber
Senior Partner & Advisor

PA Europe - Strategy Consulting & Public Affairs
106 Franklinstraat
1000 Brussels
Belgium

Tel: +32 2 735 8396
Mobile: +32 477 130 655
Web: www.pa-europe.com
Email: davidwebber@pa-europe.com