

Bio-based economy: market pull measures for bio-based products (nova-Institute September 2014)

Preliminary list – basis for discussion; more ideas and feedback welcome! (lara.dammer@nova-institut.de)

Aside from incentives for feedstock or production, it is possible to stimulate market pull in order to support bio-based products and materials. Bans and mandates for certain product groups constitute one way to create such a pull. The following list is a compilation of ideas for which bio-based product groups it would make sense to implement bans and mandates. All of the proposed measures are based on environmental or health reasons.

NO.	Measure	Reason	Who / what benefits?	Notes
1	Specific market pull measures: Mandatory regulations / Directives for bio-based & biodegradable materials; bans against conventional materials	Environmental reasons	Bio-based & biodegradable materials reach new markets	
1a	Mandatory bio-based and biodegradable (in soil) materials in specific agro- and geotextiles such as mulching films, tree protection, silage films, agricultural twines, tomato clips, vineyard clips, grass nails, nails for road side construction. (Ban of others products)	Environmental reasons: To avoid plastic waste and plastic micro-particles in the environment, especially in soil and water.	Bio-based plastic films and natural fibre mulch mats & textiles, which biodegrade (fast) in soil.	
1b	Mandatory bio-based and biodegradable lubricants in environmentally sensitive contexts (chain saws, boats, harvesting equipment) (ban others)	Environmental reasons: To avoid non-biodegradable / toxic lubricants to enter the environment, especially in soil and water.	Bio-based and biodegradable chain-saw lubricants (biodegradable in soil and fresh water)	
1c	Mandatory bio-based and home compostable fruit stickers – sticker materials AND adhesives (ban others)	Environmental reasons: Non-biodegradable fruit stickers cause problems in home compost; plastic micro-particles enter soil and water.	Bio-based and home compostable plastics	
1d	Mandatory bio-based and fast biodegradable peeling particles in cosmetics and body care products (ban others)	Environmental reasons: To avoid micro-particles in the environment, especially in soil and water.	Bio-based and fast biodegradable materials (in fresh water and marine water)	
1e	Mandatory nanocellulose films for transparent envelope windows and package stickers (ban others)	Environmental reasons: Transparent plastic films in envelope windows hinder the paper recycling	Nanocellulose films	
1f	Mandatory bio-based and biodegradable body bags and urns (and other funerabilia).	Environmental reasons: Conventional body bags are PVC, practically mummifying deceased persons. After 30 years burial, when graves are emptied, this leads to dramatic situations.	Biodegradable plastics and biodegradable naturally reinforced composites (for example for urns or coffins)	Already mandatory in FR and NL.

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1g	Mandatory use of bio-based and bio-degradable materials (plastics / cotton / cellulose) for hygiene articles that are often discarded via sewage: wipes, tampons, diapers, maxi pads etc.	Environmental reasons: To avoid plastic waste and plastic micro-particles in the environment, especially in soil and water.	Biodegradable plastics and other bio-based materials that biodegrade fast in soil and water.	
1h	Mandatory use of (home)compostable plastics for coffee capsules.	Environmental reasons: Aluminium and other plastic coffee capsules pose massive littering problems; on the other hand coffee grounds serve as excellent additive for compost. Home-compostability of coffee capsules would avoid a large amount of plastic littering and improve quality of compost and soil.	Home-compostable plastics.	
1i	Mandatory use of (slowly) bioegradable plastics in marine water for fishing nets.	Environmental reasons: By-catch from floating fishing nets that are forgotten and left in the ocean pose a big threat to fish populations. If these nets were to biodegrade after a while, the threat could be reduced.	Biodegradable (in marine water) plastics	
1j	Ban on non-compostable and non-biodegradable plastic bags for wrapping fruit, meat, etc. (EP 16.04.2014)	Environmental reasons, avoid plastic littering to enter soil and water.	Biodegradable plastics	EP draft: by 2019.
2	Promote Xylitol as C5 sugar alternative from trees	Health reasons: Less calories than sugar and non-cariogenic	Lignocellulosic biorefineries	
3	Market pull measures for durable bio-based plastics and other bio-based materials	Environmental reasons: Incentives to reduce the CO₂ footprint of plastics.	Creating new markets for bio-based plastics and natural fibres	
3a	Minimum bio-based share of 10% (increasing continuously) for all polymers, if bio-based drop-in polymers with identical properties exist.	Environmental reasons: Incentives to reduce the CO ₂ footprint of plastics; No technical arguments that prevent an implementation (from production to recycling)	Bio-based drop-in plastics such as bio-based PE, PP and PET	Via the Eco-Design Directive?
3b	Limits for average CO ₂ footprint per kg plastics for mass products; for example 3,0 CO ₂ equivalents per kg in the beginning, continuously lowered through the years.	Environmental reasons: Incentives to reduce the CO ₂ footprint of plastics.	Recycled plastics, best petrochemical plastics and a full range of bio-based plastics.	Needs clarification.

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3c	End-of-life vehicle directive: one proposal is to consider the share of biomass in the materials as materially recycled regardless of how they are recovered (the green CO ₂ in the bio-based materials was absorbed by crops before and does not contribute to climate change). This could be an incentive for the automotive industry to increase use.	Environmental reasons: So far, there no incentives for bio-based products in cars, although they usually have a lower carbon footprint.	Bio-based plastics and composites, natural fibres	
3d	Construction Products Regulation: Include more specifications on wood and other bio-based construction materials as alternative to fossil materials.	Environmental reasons: Lower carbon footprint of bio-based construction materials (foams for insulation, composite material, mortar, and concrete made of vegetative aggregate particles) is not accounted for in the the Construction Products Directive, even though these products have now become sufficiently advanced to offer a real alternative. .	Woodworking industry, bio-based composites and foams, others	see LMI recommendation
3e	Insulation material: For natural fibre materials, important properties (heat transfer delay, thermal conductivity, regulation of moisture) need to be fairly covered by construction regulations, norms etc.	Environmental and health reasons: Construction industry becomes more sustainable and consumers benefit from healthier room climates.	Natural fibre industry	
3f	Include bio-based materials in construction in the Carbon Capture & Storage (CCS) programme (very good carbon storage effects of durable bio-based materials)	Environmental reasons: Climate protection through carbon storage in the next 50 to 100 years with bio-based construction materials	Durable bio-based plastics and composites in construction (window frames, tubes etc.)	