

STAR4BBI

Standards and Regulations for the Bio-based Industry



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Project overview



Start date: 01 September 2016

End date: 31 August 2019

STAR4BBI supports the establishment of a coherent, well-coordinated and favourable regulatory and standardization framework for the European bio-based economy.

OBJECTIVES

- Support adaption of regulatory framework and relevant standards for selected existing value chains.
- Propose regulatory alternatives that facilitate investments in existing and new value chains.

WHY?

- PROACTIVE REGULATION → Driver for emerging industries, helps to attract investments.
- PROACTIVE STANDARDISATION → Harmonises supply chains, reduces risks, stimulates investments.

HOW?

- Based on real-life bio-based value chains.
- In-depth analysis of status quo (including past barriers and hurdles).
- Forward-looking analysis (Delphi-survey, patent analysis).

Selection of market case studies



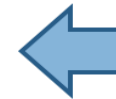
Selection
Criteria



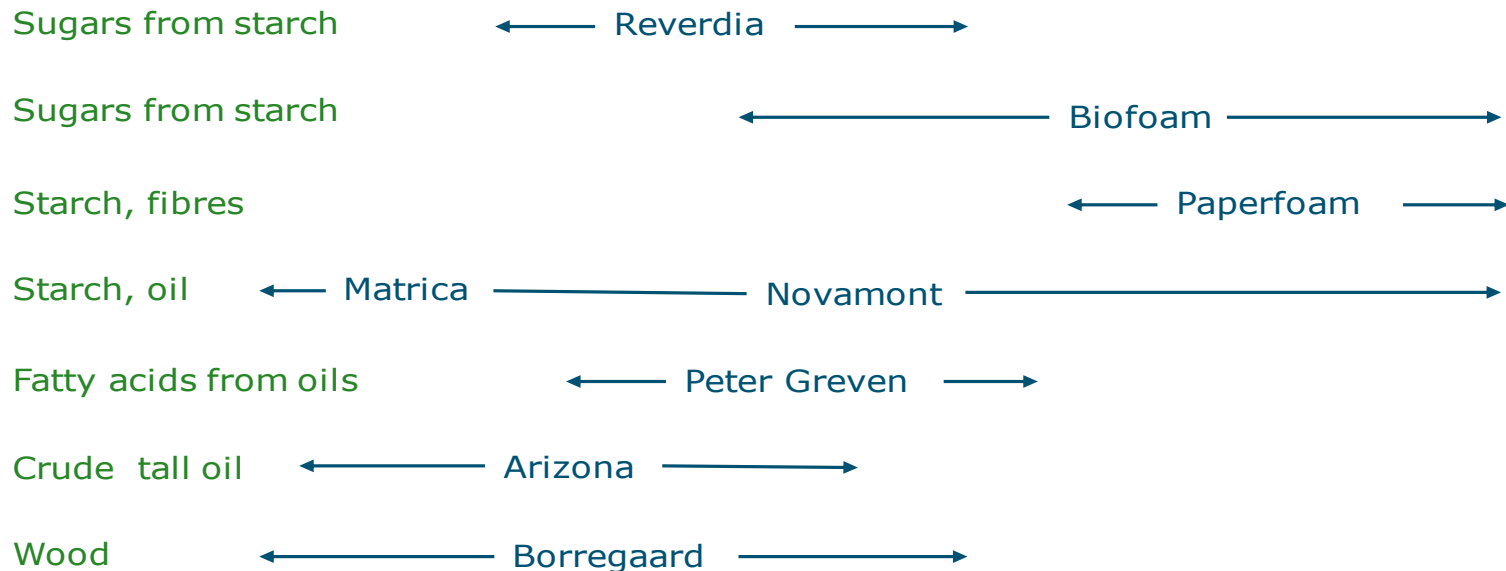
Broad coverage of feedstocks and application sectors
Existence of barriers in standards and regulations
Regional distribution across Europe
Commercial products on the market

- ✓ **Synbra**: PLA intermediates and foam for construction (sugar from starch).
- ✓ **Matrica**: Building blocks for bio-plastics (vegetable oils).
- ✓ **KRATON (Arizona Chemical)**: Pine chemicals (wood and forestry by-products).
- ✓ **Peter Greven**: Oleochemical products, mainly metal soaps for industrial applications, especially plastic additives (fatty acids from oils).
- ✓ **Paperfoam**: Packaging (wood and starch derivatives).
- ✓ **Borregaard**: Biorefining wood into cellulosic fibre and diverse lignin-based components.

Selected
case
studies



Position of industrial parties in the production chain



Main market barriers



Objective: Identification of the main existing market barriers for bio-based products in selected value chains

- End-of-life
- Certification and standards
- Biofuel policy
- (Missing) long term policy
- Communication and image

End-of-Life hurdles / Certificates



■ Different municipalities advise different disposal routes for (compostable) plastics

■ Conflict of interests between producers and waste processing companies/recyclers

- ▶ EN 13432 standard sets requirements for the rate of biodegradation: min. 90% to be broken down to CO₂ within six months at 58°C +/- 2°C
- ▶ The Dutch Waste Management Association (VA) states that composting time at the facilities varies from 5 – 21 days

Non-level playing field vs biofuels and fossil-based products



- CO₂ savings do not result in any advantages for bio-based product producers
- Biofuel Policy
 - Subsidies for biofuels create competition for biomass and increase prices of biomass for bio-based products (especially for so-called wastes)
 - Biofuel policy has resulted in food vs fuel discussion. The consequence is that bio-based products have to prove environmental impact while fossil-based products don't
- Long term policy for bio-based products is missing

Foresight activity on regulations, standards and investments



Objectives

- Identification of expected technological trends in the selected value chains.
- Identification of the necessary **elements** for a supportive regulatory and standardization framework, that promotes investments and technological developments in the selected value chains

Results of the analysis of foresight studies and experts interviews



- ▷ Trends in production processes
- ▷ Trends in biomass efficiency
- ▷ Needed regulatory and investment updates



General

- ▷ Trends in vegetable oil biorefineries
- ▷ Trends in starch and sugar biorefineries
- ▷ Trends in lignocellulosic biorefineries



Specific to the
selected value
chains

- ▷ Identified breakthrough technologies / innovations
 - Gene-editing techniques
 - Lignin valorisation into high-value products
 - Furan chemistry from sugars

Issues chosen for further elaboration



End-of-Life possibilities (EoL)

- Conflict of interests between producers and waste processing companies/recyclers

Certification and standards

- Standards are not in line with everyday practice (compostability standard, e.g. EN 13432)

Need for a carbon tax

Biofuel Policy

- Biofuel policy puts pressure on availability and price of biomass for bio-based products, this results in non-playing field between bio-based products and biofuels

Waste Framework Directive

- Clear definition of wastes, residues, by-products is missing

ST★R4BBI Proposals

Stakeholders

Waste processors

Bio-based industry

National Governments

EU / Policy makers

Municipalities

Biofuel producers

NGOs

STAR4BBI proposals and final results



- Policy paper on strategy for development of a Regulations, Codes and Standards framework
- Regulation action plan: Proposal and action plan for amendment of existing or development of new European regulations and links to standards therein



Thank you for your attention!

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