



The Biobased Economy - Ireland: is the Future Now?

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Background

Chair of Scientific committee for the Biobased Industries Joint Undertaking (BBIJU) – Flagship Public (EC) - private (BIC) partnership for the Bioeconomy 2014-Present)

EC “Expert group for biobased products” (2013 – present) – DG GROW - Part of EC Bioeconomy strategy

Public procurement/standards

Public engagement/dissemination

Market measures for biobased product market entry

Member of EC (DG GROW) *ad hoc* committee (2007-2011)

“Lead market initiative for biobased products”





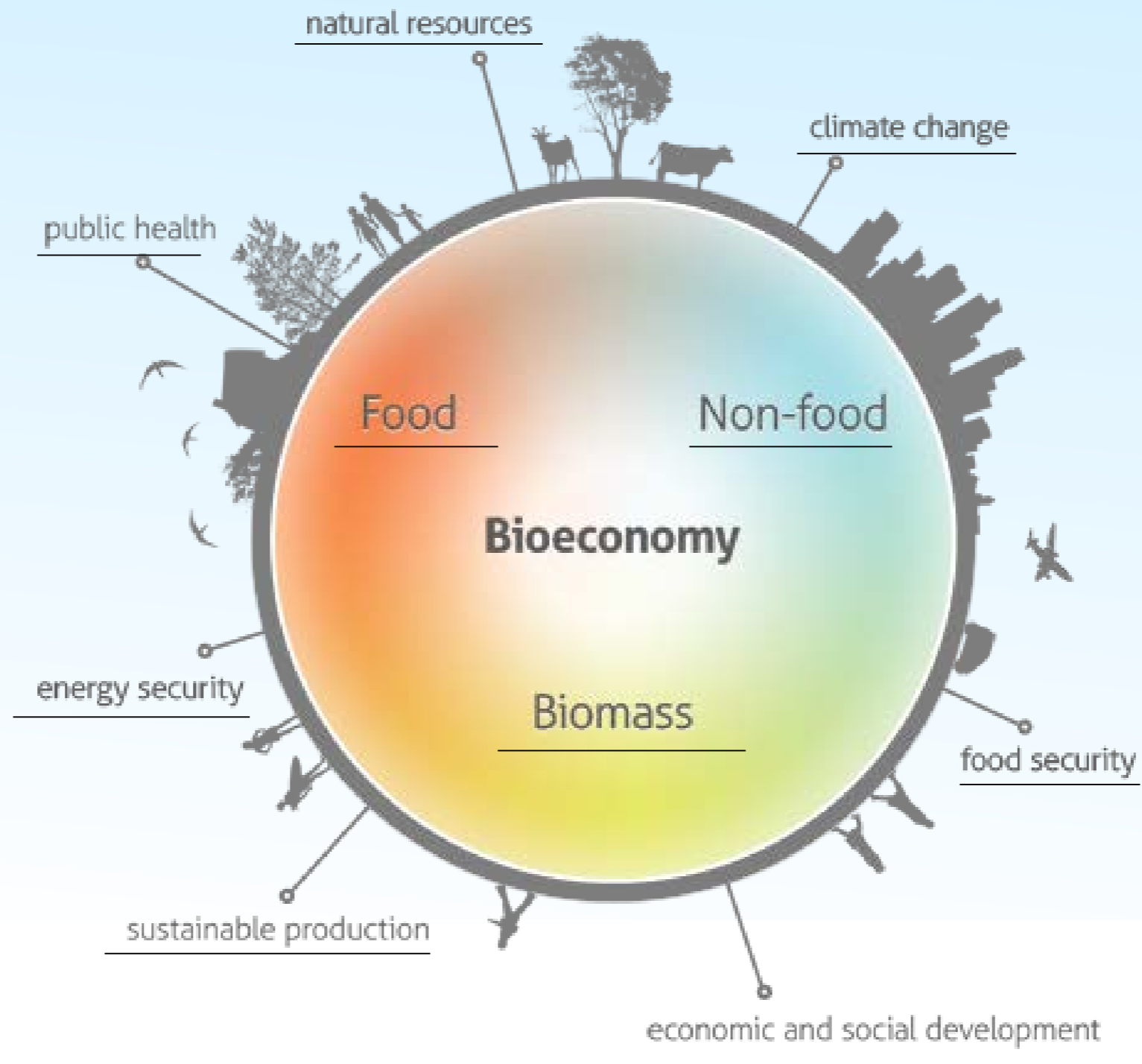
The Challenges

A bioeconomy for Europe

Europe has to address key **inter-related challenges**

- 1. Food security**
- 2. Energy security**
- 3. Climate change**
- 4. Re-industrialisation of Europe**
- 5. Reducing our dependence on fossil resources**

The Bioeconomy





The EU Bioeconomy

- Economic and social opportunity
- Annual turnover of €2 trillion
- 22 Million Jobs
- 10 % of workforce in EU
- 12% of the EU27 turnover
- > 700,000 jobs (80% rural) by 2030
- New value chains – securing existing jobs and creating new jobs



EC Bioeconomy strategy



BIO-BASED INDUSTRIES
Public-Private Partnership

BBI Joint Undertaking
Using renewable natural resources and innovative technologies for greener everyday products

www.bbi-europe.eu

Adjusted SIRA - Draft

SIRA 2

Strategic Innovation and Research Agenda (SIRA)

Bio-based Industries for Development and Growth in Europe

Version 2, December 2016

Disclaimer:
This document is the first update of the Strategic Innovation and Research Agenda, originally published in March 2013. It reflects the ambitions and objectives of the members of the Bio-based Industries Consortium (BIC) in December 2016, and is the basis for road mapping towards the BIC calls for proposals. The BBI SIRA will be adjusted as needed to reflect technology and market developments, results obtained and ambitions of new members entering the BIC.

Strategic Innovation and Research Agenda (SIRA)

Bio-based and Renewable Industries for Development and Growth in Europe

- March 2013 -



The European Bioeconomy

- **Key objectives**

- Reindustrialisation of Europe
- Rural redevelopment (>800,000 jobs by 2030)
- Sustainability – Resource efficiency, GHG reduction, Low carbon society
- Green engine of the Circular Economy
- Innovation to allow diversification and growth
- Moving Europe towards a post-petroleum society
- Development of a coherent policy framework



International Bioeconomy activity



PULP2VALUE

Processing Underutilised Low value sugar beet Pulp into VALUE added products

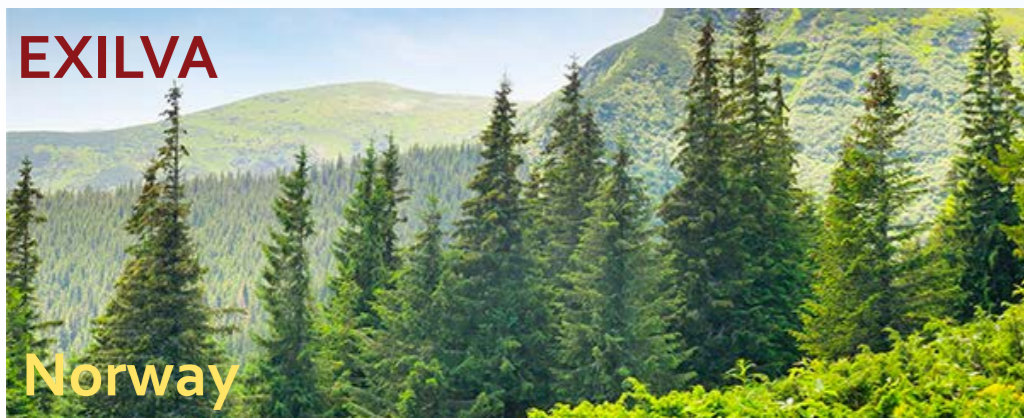
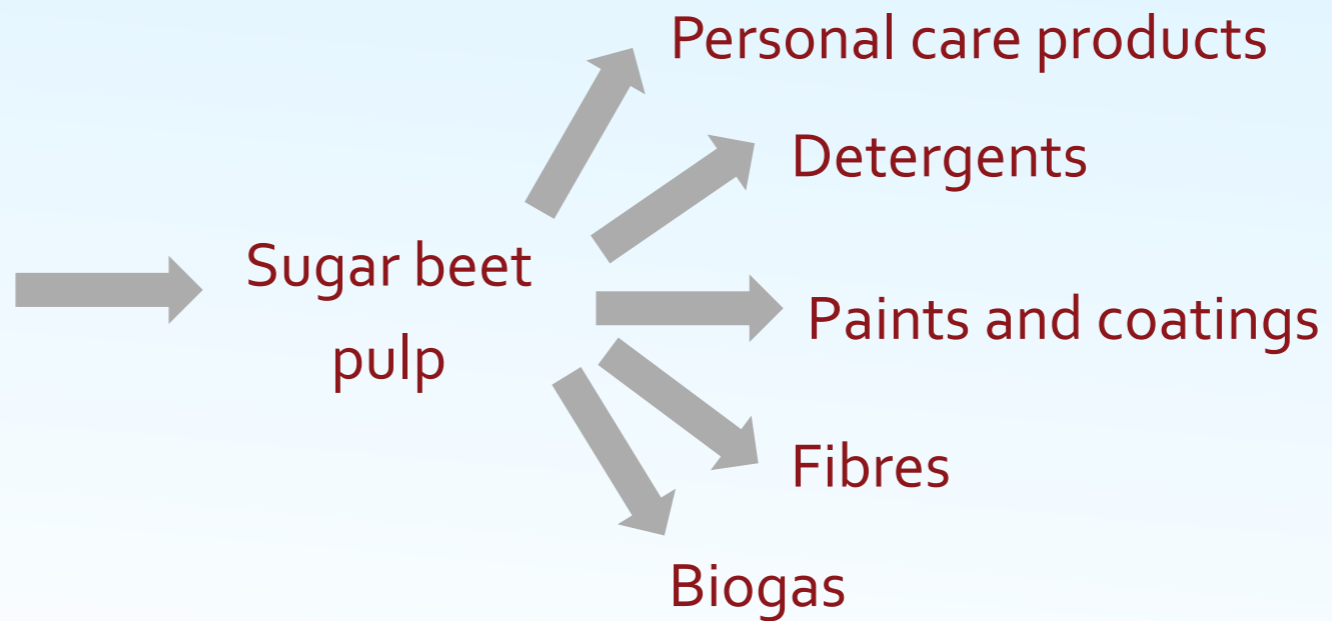
Sugar beet pulp accounts for approx. 13 million tonnes in Europe and is a major residual stream from the sugar beet industry, which is currently valorised as low value feed and/or green gas.

The objective of PULP2VALUE is to isolate more valuable products from this side stream. The PULP2VALUE approach intends to demonstrate an integrated and cost-effective cascading biorefinery system to refine sugar beet pulp into high value products for detergents, personal care, oil based paints and coatings and composites.

News
AkzoNobel and Royal Cosun to develop sustainable cellulose products from sugar beet processing
4 May 2016, News Details

Upcoming events
BiobasedWorld
15-16 February 2017

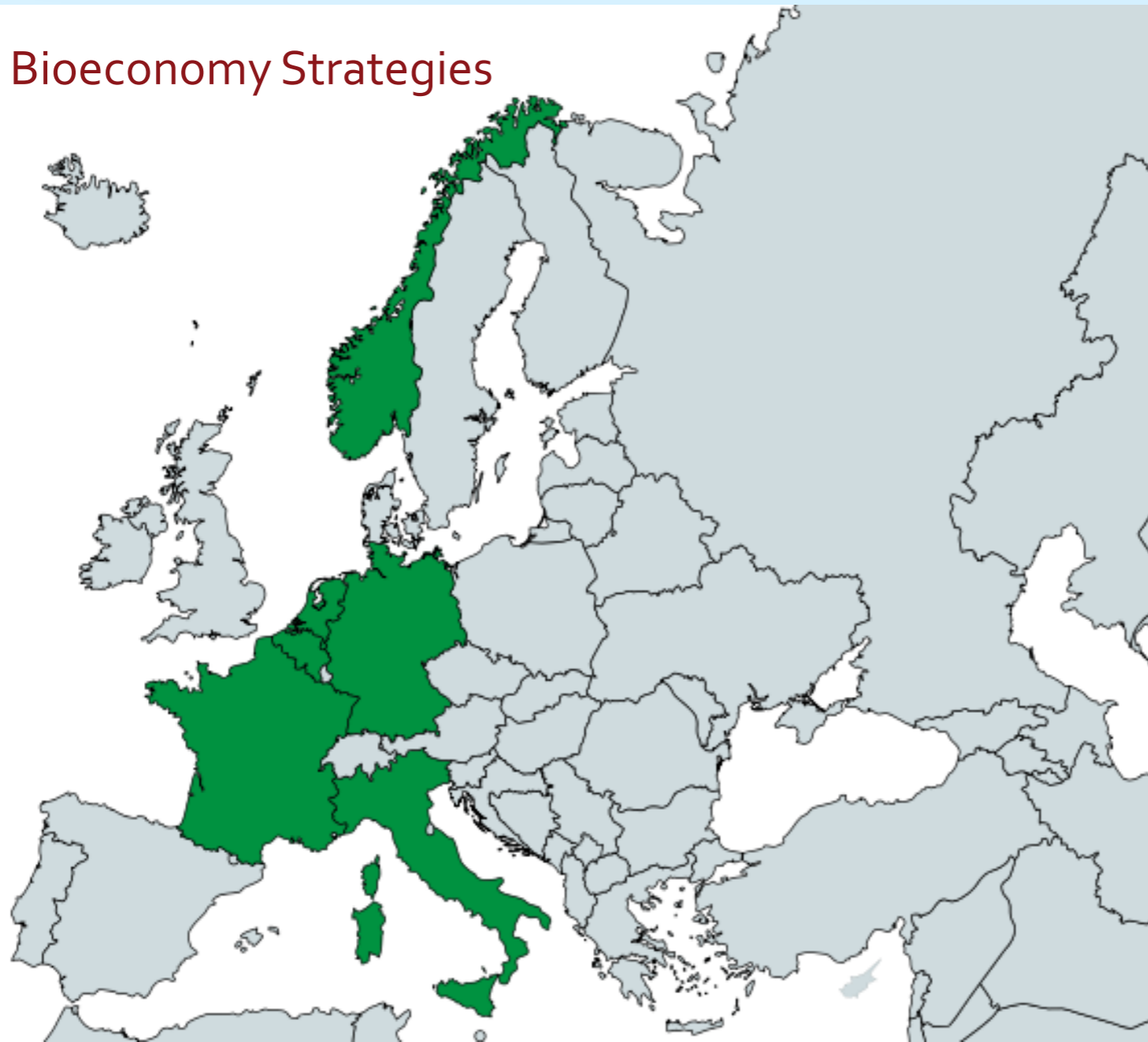
Netherlands





International Bioeconomy strategies

National Bioeconomy Strategies



USA, Canada, Japan

These countries are Innovation leaders and are early adopters of the bioeconomy seeing its potential for sustainable growth.

Ireland needs to act now to develop a Bioeconomy strategy and build the new Bioeconomy



Building a Bioeconomy Ecosystem (Ireland needs to act now)

Science Social Science Engineering Policy Business Market





The Bioeconomy

The bioeconomy has **strong innovation potential** due to the use of a wide range of sciences, enabling and industrial technologies, engineering, and local and tacit knowledge.

Ireland's resources

Agricultural products

Agricultural byproducts

Food residues

Food processing side streams,

Wastewater

Marine resources



High value products

Chemicals

Polymers



The Bioeconomy: A model for sustainable growth

Economic growth potential is a major driver of industrial interest in the BBI JU

Technological achievements in research are ready to be translated (e.g. lignocellulose)

BBI JU is a way of sharing the risk between public and private sector in the scaling of these technologies and the development of a European wide ecosystem

BBI JU is much more than technology scaling (Policy, standards, sustainability, consumers, market).



Policy and standards

Clear policy framework to allow investment in emerging technologies and products of the bioeconomy.

Examine policy which will incentivise primary producers, increase their engagement and promote inward investment in biorefining in Europe.

Develop standards for biobased and biodegradable products (CEN TC 411).

Examine measures to allow efficient biobased resource mobilisation (sustainability criteria; costs, logistics, availability).



Policy and standards

Lack of common European policy is impeding widespread business growth in the Bioeconomy

Distortive policy for bioenergy and no policy for Biobased products is also an impediment

Energy and biofuels are part of the bioeconomy they are NOT the Bioeconomy.

Biobased chemicals will be the economic driver for the European Bioeconomy. Co products such as biofuels and bioenergy will be viable as a result of chemical production.



Consumer behavior and acceptance

Open and transparent communication

Bi-directional communication for full contribution to the debate

Showcasing biorefinery activity

- Product performance

- Job creation (rural development)

- Environmental benefits



Sustainable value chains

The entire value chain should be viewed when developing technologies

Life cycle thinking (from TRL 1) and life cycle analysis (From TRL 3 onwards)

Focus on cascading

There is a need to improve resource efficiency to reduce waste and produce high value biobased products.



Market implementation

Market

Examine means of encouraging the uptake of biobased products e.g. Green public procurement

Analysis of the conditions for supporting industry investment is required, as well as the possible mechanisms for reducing their risk.

Standards and certification – global standards

Incentives to stimulate market activity e.g. incentives for the valorisation of biological waste.

Industry cooperation for synergism is a major opportunity

Bioeconomy strategies are critical to maximise innovation potential



Bioeconomy Conclusion

If Ireland acts now we can see the benefits of the bioeconomy

Rural, and industrial development

Securing current **jobs**, Creating new jobs, Training/education of work force

Investment - Indigenous and FDI

Competitiveness: Increased exports

New opportunities: New value chains, businesses, business relationships

Entry in to **growing global markets**

Sustainability, Resource efficiency, GHG reductions, indigenous resources