



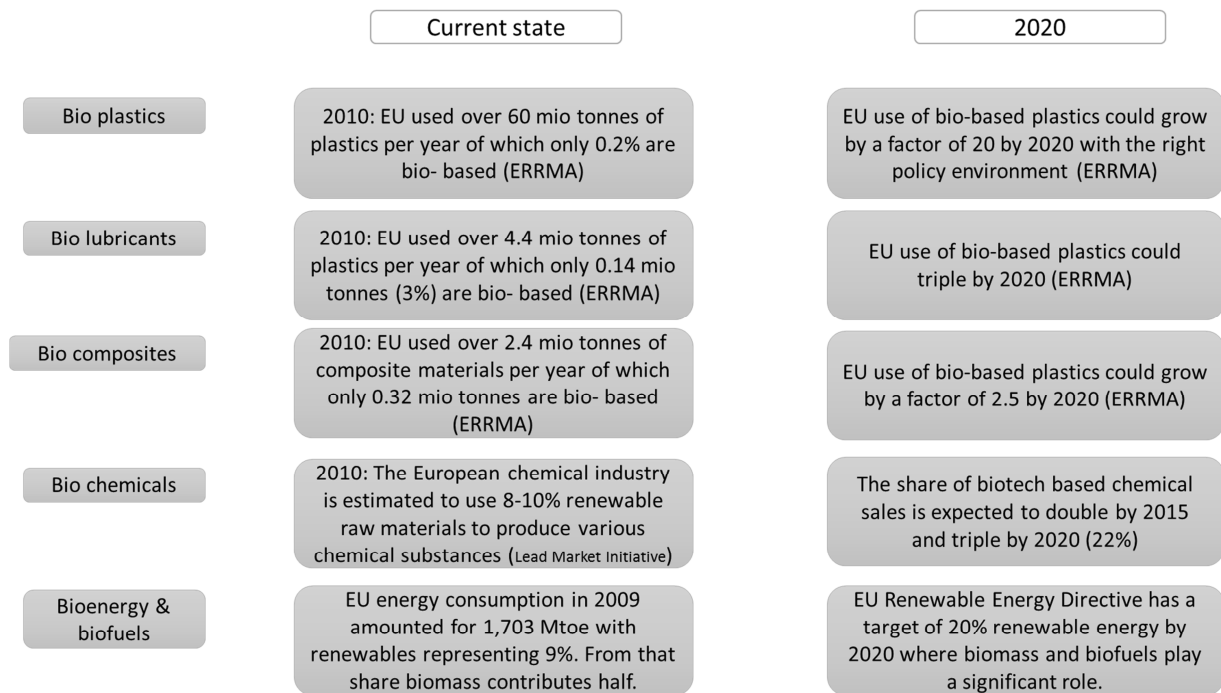
Vision for the sustainable and resource efficient biomass use in Europe

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**Setting the Scene**

The current market share for biobased products in EU28 is still low but fast growing and high expectations have been expressed by the industrial sectors for 2020 (Figure 1), a result to increased consumer awareness and product availability in the European markets.



**Figure 1 Current state and expected market shares by 2020 for biobased markets in Europe**

A recent overall estimation of the **bioeconomy** markets in the EU has been provided in the staff working paper<sup>2</sup> accompanying the Commission communication on the bio-economy. In 2009 the bioeconomy in broad terms (including agriculture, forestry, food, pulp & paper, chemicals, etc.) accounts for more than 2000 billion € annual turnover and more than 22 million jobs.

The same study values the segment of **bio-based industries** at approximately 57 billion € in annual turnover with some 300,000 jobs involved. Bio-based industries in this assessment include the following main categories: biochemicals and plastics (50 billion €); enzymes<sup>3</sup> (0.8 billion €) and biofuels (6 billion €).

<sup>1</sup> The views expressed do not imply a policy p[osition of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of those views.

<sup>2</sup> SWD(2012) 11 final 13.02.2012

<sup>3</sup> Often applied as "intermediate products" in the bio-based industries, enzymes are proteins that are used to "catalyse" certain chemical reaction steps that are essential in the production process of biochemical or biofuels.

Europe has a few small companies specialised in bio-based products and several major chemical companies developing bio-based applications<sup>4</sup>.

It has been estimated that in 2010 the European **chemical** industry used 8-10% renewable raw materials to produce various chemical substances<sup>5</sup>.

In 2010 the global production capacity for **bioplastics** was estimated to amount to 0.72 Million tonnes. This represented only 0.3% of the overall global production of plastics estimated at 245 Million tonnes. In 2010 the EU had an estimated 38 % share of the world capacity in bioplastics production.

For the same year (2010), the EU's **liquid biofuel** production amounted to **12 Mtoe** with biodiesel (9.6 Mtoe) well ahead of bioethanol (2.3 Mtoe). The EU production of biofuels in 2010 thus represented approximately 3 % of the 370 Mtoe final energy consumption of the transport sector.

### *How does the S2Biom project support policy makers?*

The biobased economy is considered as one of the key elements to achieve a smart and green Europe (EU 2020 Strategy; Bioeconomy Strategy, etc.). To develop a bioeconomy for energy, fuels and biobased products a number of challenges need to be addressed, e.g. the competing uses of biomass, and securing a reliable and sustainable supply of biomass feedstock. Over the last decade, various policies and economic frameworks have been put in place to tackle some of these challenges. But policy makers still have to consider the various policies across sectors (e.g. in relation to agriculture, forestry, waste, environment, energy, trade) and governance levels (from EU to national, regional and local) which need to be harmonised and facilitate market deployment through the efficient development of the bioeconomy.

So far, the sustainability of bioenergy has been legally addressed in the EU Renewable Energy Directive 2009/28/EC (RED)<sup>6</sup> and Fuel Quality Directive (FQD)<sup>7</sup> by establishing mandatory criteria, especially for GHG emissions and carbon stocks, but these regulations are only restricted to biofuels and liquid bioenergy carriers<sup>8</sup>.

Regarding to the non EU countries under study in this project (Western Balkans, Moldova, Ukraine and Turkey), it is worth mentioning that in October 2012, Energy Community contracting parties<sup>9</sup> adopted the obligation to implement RED Directive. However, Contracting Parties did not develop specific policies or targets for biomass yet, and there are no specific policies on sustainability of production and use of biomass as well.

S2Biom contribution to policy for the bioeconomy: Within the EU28 Member States there is a clear need to give a structured overview of which regulatory and economic frameworks exist at different levels, to benchmark the effectiveness of different approaches and develop coherent policy guidelines to support the sustainable development of the biobased economy.

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<sup>4</sup> EC Enterprise and Industry (2009): Taking Bio-based from Promise to Market – Measures to promote the market introduction of innovative bio-based products

<sup>5</sup> The Commission report “A lead market initiative for Europe - Explanatory Paper on the European Lead Market Approach: Methodology and Rationale”, pages 63-64. An estimate from FNR is 8% in 2003. A McKinsey report estimated the share to 10% in 2010.

<sup>6</sup> Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources.

<sup>7</sup> Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC.

<sup>8</sup> See footnote **Error! Bookmark not defined.**

<sup>9</sup> Albania, Bosnia & Herzegovina, Croatia, FYROM, Moldova, Montenegro, Serbia, UNMIK, Ukraine/ Turkey is an observer.

At the same time, for Western Balkans, Ukraine, Moldova and Turkey it is very important to develop a biomass and biofuels policy that is aiming at fulfilling the EU requirements and more importantly, to provide the emerging bioenergy sector with regulations required for their sustainable growth and performance.

The S2Biom project:

- ✓ Provides a structured overview of all elements of economic and regulatory frameworks that relate to the sustainable delivery of non-food biomass at different levels of governance across Europe (i.e. local, regional and pan-European), and develops consistent policy guidelines.
- ✓ Develops a Vision for the sustainable and efficient biomass uptake in Europe.

The setting up of a Vision for the uptake of biomass in EU has primarily taken place within the respective Technology Platforms (European Biofuels Technology Platform / EBTP, Renewable Heating and Cooling Platform / RHCP) and the most recent EU Bioeconomy Strategy and Action Plan (2012) ([http://ec.europa.eu/research/bioeconomy/pdf/201202\\_innovating\\_sustainable\\_growth.pdf](http://ec.europa.eu/research/bioeconomy/pdf/201202_innovating_sustainable_growth.pdf)) and industrial initiatives for the Biobased economy (<http://www.cepi.org/node/653>)

Though the above-mentioned initiatives have successfully set the path towards suggesting indicative shares for energy, fuels and biobased products in Europe up to 2030, it is widely understood that the wide variety of supply & logistics value chains, the complex interactions of the key market sectors involved - especially expanding from bioenergy and biofuels to the bio-based economy- and the expectations from the advanced pathways, which when fully commercial will facilitate the success of achieving the policy targets, fully justifies the development of a new, coherent and technically substantiated Vision.

S2Biom contribution to strategy and implementation plans: The project builds on the above initiatives; and develops consistent and technically substantiated Vision with a respective R&D roadmap for the delivery of non-food sustainable biomass supply in Europe to meet demand for 2030.

To do this the work also capitalises on the substantial involvement of a number of partners in the Technology Platforms (EBTP; RHCP), the contribution of Central European Institute (CEI)<sup>10</sup> and JRC<sup>11</sup> as strategic institutional capacities for Southeast Europe and the European Commission respectively and the PPP for Biobased industry<sup>12</sup>.

### ***Aim of the workshop***

The aim of the workshop will be dual:

- To present the Vision for sustainable and resource efficient biomass supply in Europe and discuss details of its main components.
- To discuss gaps, future steps and integration of the Vision into future policy and strategy documents at EU, Energy Community Secretariat and national levels.

A briefing on the current status of bioeconomy and an outlook to biomass cost supply issues will be given as well.

Duration: one half day session

Place and date of the workshop: JRC Ispra (Italy) – IPR Room 03 / Building 36b, 01.10.2015 p.m.

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<sup>10</sup> <http://www.cei.int/>

<sup>11</sup> JOINT RESEARCH CENTRE

<sup>12</sup> biconsortium.eu

## *Agenda*

Thursday 1<sup>st</sup> October 2015

**12:30-14:00**      *Delegates check-in & lunch*

**14:00-14:10**      **Welcome – C. Ciupagea, Head of Sustainability Assessment Unit /SAU/ - JRC-IES**

**14:10-14:25**      **Scope of the Workshop – C. Panoutsou (Workshop Co-Coordinator, Imperial College London, Centre for Energy Policy and Technology) & Boyan Kavalov (JRC-IES-SAU)**

**14:25-14:45**      **S2Biom project Overview – Ludger Wenzelides (FNR)**

**14:45-15:15**      **Vision for the sustainable & resource efficient biomass supply – Dirk Carrez (Clever Consult)**

**15:15-15:35**      **Bioeconomy: the market potential in 2020- Marc Londo (ECN)**

**15:35-15:55**      **Building a “resource efficient” bio-economy for Europe- Lignocellulosic biomass cost supply - Matthias Dees (University of Freiburg)**

**15:55-16:10**      **Questions & Answers**

**16:10-16:25**      *Coffee break & discussion*

**16:25-16:45**      **Optimal conversion technologies in 2020 – Douwe van der Berg (BTG)**

**16:45-17:05**      **Mobilisation of non-food biomass in a sustainable way - Leire Iriarte (IINAS)**

**17:05-17:35**      **Optimised regulatory and political framework in 2020 - C. Panoutsou (Imperial College London)**

**17:35-17:50**      **Questions & Answers**

**17:50-18:00**      **End of the workshop & logistics arrangements**

**18:00**              *Bus departure & return to the hotels in Angera*

**19:20**              **Meeting at the lobby of hotel Pavone for dinner**

**19:30-21:30** *Dinner at restaurant Vecchia Angera (hotel Pavone)*