

S2Biom Newsletter - Issue 3 March 2015

The S2Biom project

The S2Biom project - Delivery of sustainable supply of non-food biomass to support a “resource-efficient” Bioeconomy in Europe - supports the sustainable delivery of non-food biomass feedstock at local, regional and pan European level through developing strategies, and roadmaps that will be informed by a “computerized and easy to use” toolset (and respective databases) with updated harmonized datasets at local, regional, national and pan European level for EU28, Western Balkans, Moldova, Turkey and Ukraine.

Further information about the project and the partners involved are available under www.s2biom.eu

The project duration is 36 months and the activities started in September 2013.

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This Newsletter

In this S2Biom newsletter issue, we would like to present the review paper on the state-of-the-art of sustainable supply of non-food biomass for a resource efficient bioeconomy. In addition, we will give an overview and the rationale of the scenarios developed in the project through which knowledge across the various biomass supply knowledge gaps, etc. will be improved based on sensitivity analysis.

Review paper on the state-of-the-art of sustainable supply of non-food biomass for a resource efficient bioeconomy

The aim of this paper is to provide an overview of various studies on the current and future potential for sustainable supply of non-food biomass in the EU. It is a baseline for the update, comparison and refining of the datasets which will be compiled throughout the S2Biom project.

The review focused on the following biomass categories: Forest biomass, non-food lignocellulosic crops, agricultural residues and residual biomass from waste. The results based on various estimations showed that the EU is able to produce between 6,900 PJ and 16,600 PJ from biomass for its energy consumption today. These estimates could increase to 10,600 PJ and 21,350 PJ in 2020, and to 10,850 PJ and 22,700 PJ in 2030.

This indicates that the current supply of biomass is not exhausted and has also good potential to increase. However, still the lack of update, consistent datasets makes it challenging to estimate these figures in a harmonised and coherent way. In addition, the estimates vary to a large extent due to different definitions of potentials and due to different methods/ tools applied. Nevertheless most of the studies reviewed agree that:

- Biomass potentials from forestry and waste remain relatively stable over time
- Waste and agricultural residues have substantial potential that is currently barely exploited for energy/ non energy uses
- Large uncertainty exists on how much biomass from agriculture can be mobilised over the different time periods.
- For the future, non-food lignocellulosic crops and agricultural residues seem to be the key for broadening the biomass supply base in Europe while biomass from forestry and waste remain constant.

The research work undertaken within the S2Biom project aims at closing the gaps of systematic data provision for sustainable biomass potentials and further clarification of the underline assumptions for their energy and non energy use.

The first step required is to develop the scenarios - based on the modelling capacities and the data available to the project consortium - for which the potential lignocellulosic biomass flows will be further analysed. A short introduction to their main characteristics follows in the section below.

For detailed information, please download the full version of [the review paper](#).

Overview of S2Biom scenarios and their main characteristics

The scenarios presented below are specifically designed to inform the ongoing discussions for the set of questions from the industrial (A) and policy (B) perspectives. An extensive description of the scenarios can be downloaded [HERE](#)

A. How much indigenous (EU28, WB, MD, UKR, TR) lignocellulosic biomass can be made available in a sustainable manner for the 2020 and 2030 timeframes?

Centralised Europe scenario

Large biorefineries within Europe

- role of macro-actors: cooperatives, investment funds, international companies, etc.
- processing activities concentrated near transport platform (e.g. ports, hubs, etc.)
- central planning of bio-based activities for Europe (energy, materials, products, carbon...)
- strong EU policies/ strategies & financing mechanisms are in place

Decentralised local scenario

Local/ regional decentralized units

- biomass "hot-spots"
- creation of added-value through SMEs
- re-organisation of the biomass supply sectors with new players
- payments for carbon credits and recreation services
- emphasis on regional/ local support mechanisms and policies

B. Can Europe meet the 2020 & 2030 targets as set in the Renewable Energy Directive and in the same time facilitate the vision for the European biobased economy and assist to the development of the biobased industries?

Policy active scenario

What are the inputs required (land & water; costs; infrastructure; GHG emissions; carbon, etc.) so that the biobased industry sectors meet their targets for 2020 and 2030

- biobased industries vision and strategy is accomplished;
- technology advances in the harvesting and processing of biomass;
- sustainability issues resolved through improvements in land productivity and crop efficiency;
- biobased products are very cost-competitive with fossil fuel counterparts – buying bio is a natural choice economically.

Policy passive scenario

How much of the biobased industry targets can be met under strict resource efficiency constraints for the 2020 & 2030 timeframes?

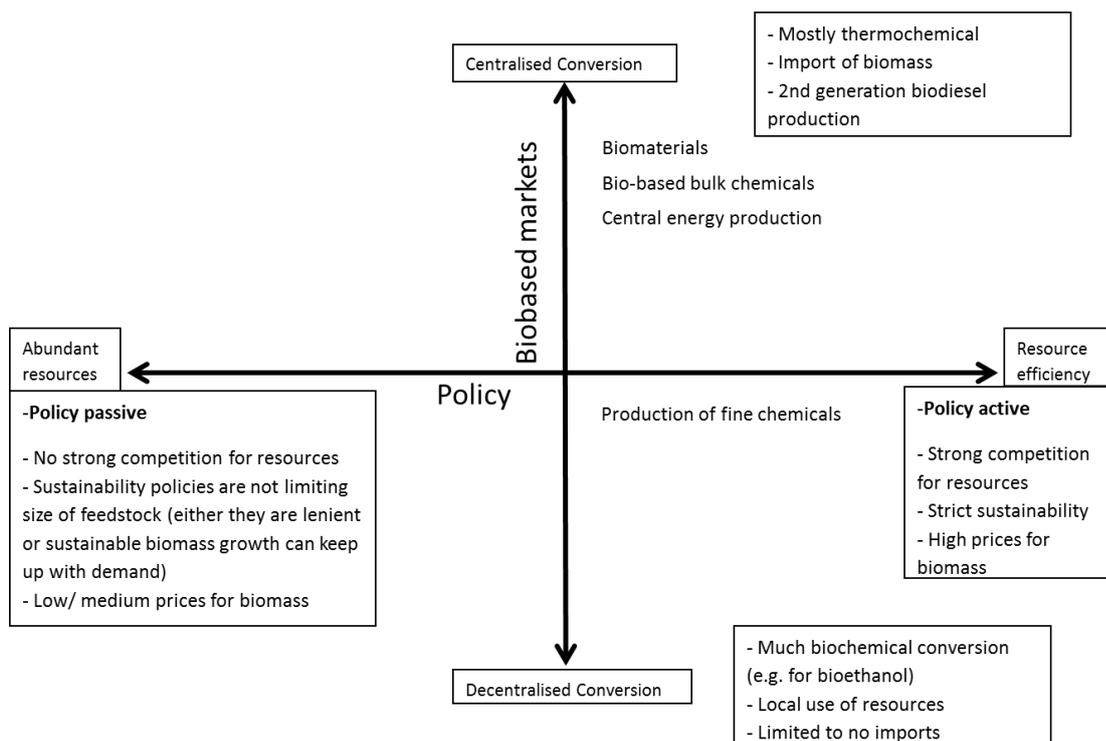
- climate change disrupts biomass production, and so in the food vs. fuel debate, food wins;
- engine efficiency, electrification, and public transit drive down overall demand for fuel;
- 1st gen biofuels decline; dismissed as viable alternatives, but advanced biofuels grow in importance;
- renewable and nuclear energy play a larger role, with policy supports;
- biobased materials and chemicals find a strong niche market.

Scenario Structure

The four scenarios are structured on the basis of two axis: one indicating the industrial perspective (Biobased markets) and the other the policy perspective as shown in the figure below.

The rationale of the biobased markets scenarios is to exploit which are the optimal biobased market organisation structures to use the available biomass in all countries targeted in the project. The key differentiating question among the two scenarios is whether this supply is best exploited in large scale centralised biorefineries (more focus on thermochemical processes) or in decentralised units (more focus on biochemical ones).

The rationale of the policy scenarios is to inform the policy agenda and target setting for the biobased industries for 2020 and 2030. The differentiating question is how much input (land & water; costs; infrastructure; GHG emissions; carbon, improved policy package, etc.) is required to meet the current targets fully and how much of the targets can actually be met under a strictly sustainable and resource efficient supply within Europe.



Case studies

As one part of the project involves the testing of the most promising lignocellulosic biomass supply chains on different regional scales, selected sets of case studies are conducted in EU28, Western Balkans, Ukraine and Turkey. At the moment the specifications for an implementation plan on advanced biofuels in Serbia and a case study on agricultural biomass in Ukraine are developed. Until June outlines on most of the case studies will be drafted.

Upcoming events

First S2Biom dissemination workshop Brussels, Belgium

The first workshop will take place on the occasion of the European Sustainable Energy Week (EUSEW) in Brussels from 15 to 19 June 2015. The workshop will gather stakeholders of the whole biomass supply chain with the following objectives:

- to provide detailed information about the project, its objectives and methodology;
- to raise awareness on the opportunities deriving from project activities and results;
- to mobilise commitment from participants to support project activities
- to test and validate the toolsets for the interactive biomass supply together with the stakeholders

Updated information about the workshop will be posted on the [S2Biom website](#)

2nd consortium meeting Ispra, Italy

The next consortium meeting will take place from 29 September to 2 October 2015 in Ispra, Italy at the JRC premises. There will be a half-day management meeting for WP-leaders and a Bioeconomy Observatory (BISO) stakeholders' workshop after the actual consortium meeting.

The agenda includes the following:

- 29 September p.m. – half-day management meeting for WP-leaders
- 30 September - 01 October - S2Biom consortium meeting
- 02 October a.m. – Bioeconomy Observatory (BISO) stakeholders' workshop on the environmental sustainability assessment

More information about the 2nd consortium meeting will be posted on the [S2Biom website](#)

S2Biom Consortium

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Project partners

