

# "Mobilisation of biomass: how can market and policy actors steer and provide support?"

Calliope Panoutsou, WG1 Chair,  
Imperial College London

# What are the key issues affecting the mobilisation of biomass by 2020 and 2030?

## ▶ What do we know about?

- ▶ uncertainties over the resource potential
- ▶ efficient use and competition
- ▶ green growth and job creation

## ▶ Which factors influence it?

- ▶ resource efficiency (incl. cascading) through supporting innovative solutions for:
  - ▶ sustainable energy, transport and construction;
  - ▶ management of natural resources; preservation of ecosystem services and biodiversity;
  - ▶ resource efficient agriculture and the wider bio-economy;
- ▶ displacement effects
- ▶ incoherent policies across energy, agriculture, etc.: how to cope with the challenging interactions required on a timely basis and at different levels of governance (from local to national)
- ▶ best practices and mobilisation (i.e. what is needed short term)

# Biomass supply is a missing pillar in achieving progress in the energy and non- energy sectors of the bioeconomy

FAO: world's population will reach 9.1 billion, 34% higher by 2050 SO increased needs for food and feed while biomass feedstocks will also increasingly be used for materials and energy, to mitigate climate change. Two sources shape demand in Europe at the moment:

Directive 2009/28/EC of the European Parliament and of the Council of 5 June 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. (to 2020- 2030 and beyond...)

Foster the sustainable development of the European biobased economy and meeting the objectives of the Bio-Based Industries (BBI) Joint Undertaking to contribute to a more resource efficient and sustainable low-carbon economy and to increasing economic growth and employment, in particular in rural areas of Europe.

# Directive 2009/28/EC

- ▶ ...moving towards feedstocks for advanced biofuels
  - ▶ Material classified as a waste, processing residue, agricultural or forestry residue, co-product, etc.
  - ▶ Not from high carbon stock land, peat land or land with high biodiversity
  - ▶ Considering the key competing uses: what would otherwise happen to the resource if it was not used for biofuels production?
  - ▶ Lifecycle GHG emissions savings of producing biofuel from the material at least 60%

# Bio-Based Industries (BBI)

## **Lead the transition towards a post-petroleum society**

- Develop an economy that:
  - sources domestic renewable raw materials
  - produces food, feed, chemicals, materials and fuels locally
  - creates jobs in a broad range of sectors in Europe, triggering rural growth across regions
  - places sustainability, smart & efficient use of resources at the heart of industrial, business & social activities
- Fostering a sustainable biomass supply and building new value chains

# A resource efficient Europe- Flagship initiative under Europe 2020 strategy

All resources are sustainably managed, from raw materials to energy, water, air, land and soil. Climate change milestones are reached, while biodiversity and the ecosystem services are protected, valued and substantially restored.

**Circular economy: Reduce, reuse, recycle, substitute, safeguard, value**

Brussels, 20.9.2011  
COM(2011) 571 final

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Roadmap to a Resource Efficient Europe**

{SEC(2011) 1067 final}  
{SEC(2011) 1068 final}

Aim for coherent and integrated response over a wide range of policies to deal with expected resource constraints and to sustain our prosperity in the long run

Resource base:  
agriculture; forest; waste

Waste is a resource  
Recycling-  
functional markets  
for secondary raw  
materials  
Energy recovery  
Ensure biomass  
regrowth  
Biodiversity  
Ecosystem services

Environment

Impacts on climate  
Land & Soils  
Water  
Air

Demand: Value chain

Demand-side  
management  
  
End-use efficiency  
conversion efficiency  
  
Integrated concepts  
(refinery, cascading,  
material hierarchy)  
  
Closing the circle  
(connecting chains,  
recycling, carbon  
cycle)

## Key principles

- ▶ Sustainable consumption and production
- ▶ Turning waste into a resource
- ▶ Supporting research and innovation
- ▶ Environmentally harmful subsidies and getting the prices right

## Natural capital

- ▶ Ecosystem services
- ▶ Biodiversity
- ▶ Minerals & metals
- ▶ Water
- ▶ Air
- ▶ Land & soils
- ▶ Marine resources



## Sustainable consumption and production

- ▶ *Improving products and changing consumption patterns* (Lead Market Initiatives, Eco-design Directive, etc.)
- ▶ **Boosting efficient production..** (where the waste of some firms is used as a resource for others)
- ▶ **Green Public Procurement**
- ▶ **Environmental footprint**
- ▶ Support to help SMEs

## Turning waste into a resource

- ▶ Stimulate the secondary materials market and demand for recycled materials through economic incentives and developing end-of-waste criteria
- ▶ **Assess areas where legislation on the various waste streams could be aligned to improve coherence**
- ▶ Ensure that public funding from the EU budget gives priority to activities higher up the waste hierarchy as defined in the Waste Framework Directive

## Supporting research and innovation

Develop 'Innovation Partnerships' for on water, raw materials and productive and sustainable agriculture

Focus Union research funding (EU Horizon 2020) on key resource efficiency objectives, supporting innovative solutions for:

- ▶ sustainable energy, transport and construction;
- ▶ management of natural resources; preservation of ecosystem services and biodiversity;
- ▶ resource efficient agriculture and the wider bio-economy;

## Environmentally harmful subsidies and getting the prices right

- ▶ *Phasing out inefficient subsidies*
- ▶ *Getting the prices right and reorienting the burden of taxation*
- ▶ **Assess how state aid for measures aiming at increasing resource efficiency has been implemented and to what extent resource efficiency objectives should be strengthened in the revisions of the relevant state aid guidelines;**
- ▶ **Continue working on improving indicators on the use of taxes on pollution and resources.**

# What needs to happen to mobilise the biomass potential?

## ▶ Knowledge improvement to inform decision making

- ▶ Understand interdisciplinary issues and assumptions which frame the future biomass supply across sectors
- ▶ Create a level playing field for biomass resources regardless to their end markets
- ▶ Work on bottom up analysis and regional focus case studies

## ▶ Policy

- ▶ Support resource efficient supply with a system approach (with legal and financial mechanisms and measures)
- ▶ Place sustainability, smart & efficient use of resources at the heart of industrial, business & social activities
- ▶ consider supply based strategies to complement the demand ones

## ▶ Markets & Industry

- ▶ Facilitate market operation
- ▶ Build “biorefinery” steps in existing industrial capacities across Europe

The background features abstract, overlapping green geometric shapes in various shades, primarily on the right side of the slide, creating a modern and dynamic feel.

# Thank you!

Calliope Panoutsou; Ausilio Bauen; Luc Pelkmans; Udo Mantau; Kai Sipila