



Present and Future of the Bioeconomy in the European Union

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Building bioeconomy in Europe
<http://ec.europa.eu/research/bioeconomy/>

- **THE POLITICAL CONTEXT**
- **THE EU BIOECONOMY:
what is it and why does it matter?**
- **EU BIOECONOMY STRATEGY AND
ACTION PLAN:
how far are we?**
- **FROM STRATEGY TO DELIVERY:
Where do we need to focus now?**

A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change

Strasbourg, 15 July 2014



“As candidate for President of the European Commission, I see it as my key task to rebuild bridges in Europe after the crisis. To restore European citizens’ confidence.”

*“My agenda will focus on **ten policy areas**. My emphasis will be on concrete results in these ten areas. Beyond that, I will leave other policy areas to the Member States where they are more legitimate and better equipped to give effective policy responses at national, regional or local level, in line with the principles of subsidiarity and proportionality.”*

“I want a European Union that is bigger and more ambitious on big things, and smaller and more modest on small things.”



A New Start for Europe: My Agenda for Jobs, Growth, Fairness and Democratic Change

Strasbourg, 15 July 2014

1 A NEW BOOST FOR JOBS, GROWTH AND INVESTMENT

2 A CONNECTED DIGITAL SINGLE MARKET

3 A RESILIENT ENERGY UNION WITH A FORWARD-LOOKING CLIMATE CHANGE POLICY

4 A DEEPER AND FAIRER INTERNAL MARKET WITH A STRENGTHENED INDUSTRIAL BASE

5 A DEEPER AND FAIRER ECONOMIC AND MONETARY UNION

6 A REASONABLE AND BALANCED FREE TRADE AGREEMENT WITH THE U.S.

7 AN AREA OF JUSTICE AND FUNDAMENTAL RIGHTS BASED ON MUTUAL TRUST

8 TOWARDS A NEW POLICY ON MIGRATION

9 A STRONGER GLOBAL ACTOR

10 A UNION OF DEMOCRATIC CHANGE

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Where do we need to focus on?

The bioeconomy: what are we talking about?

"The sustainable and smart use / production of renewable biological resources from land and sea, and the conversion of these resources and waste streams into value added products, such as food, feed, bio-based products and bioenergy"

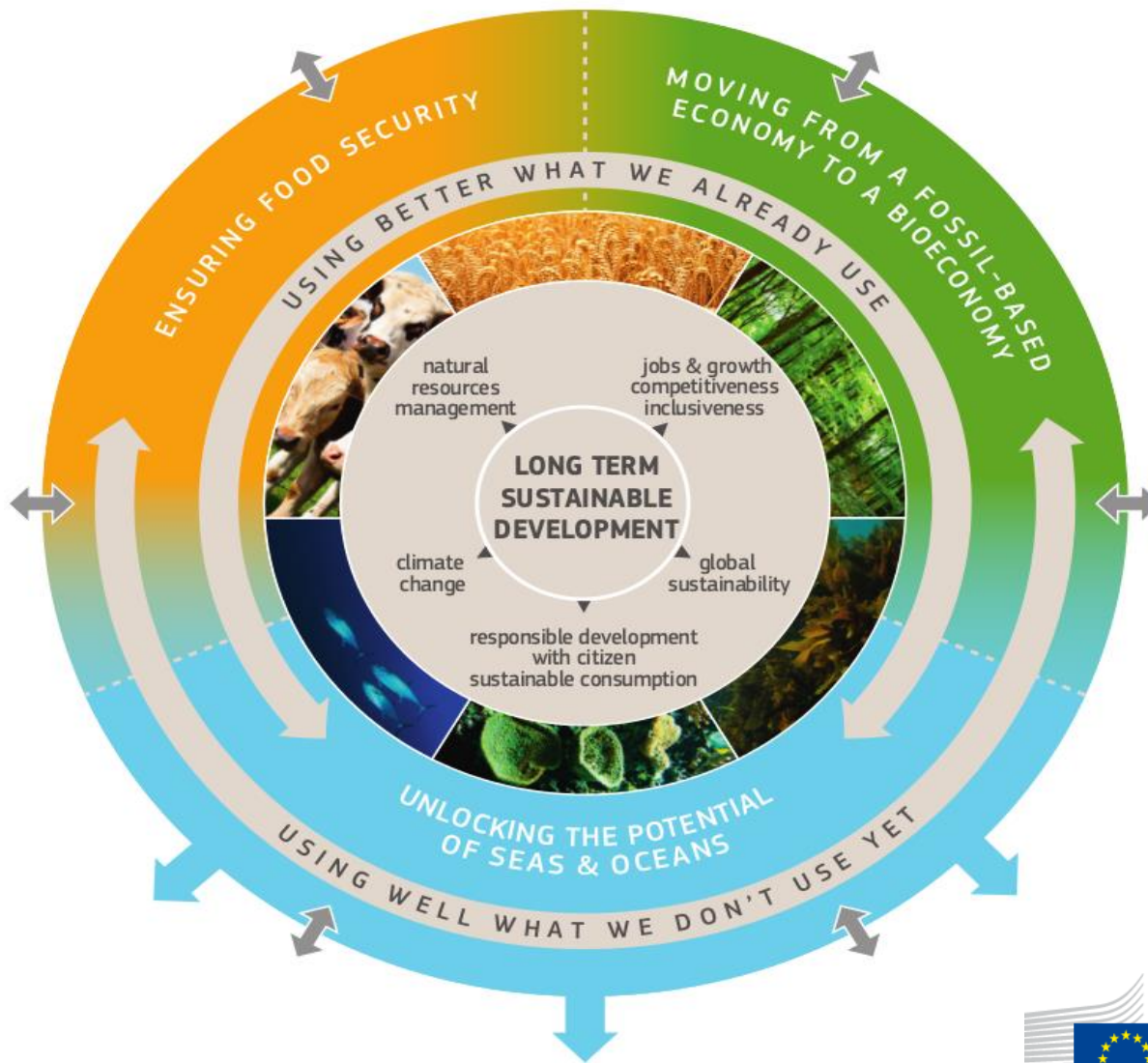
Sectors:

- agriculture, forestry, fisheries, food, pulp & paper
- parts of chemical, biotechnological and energy industries

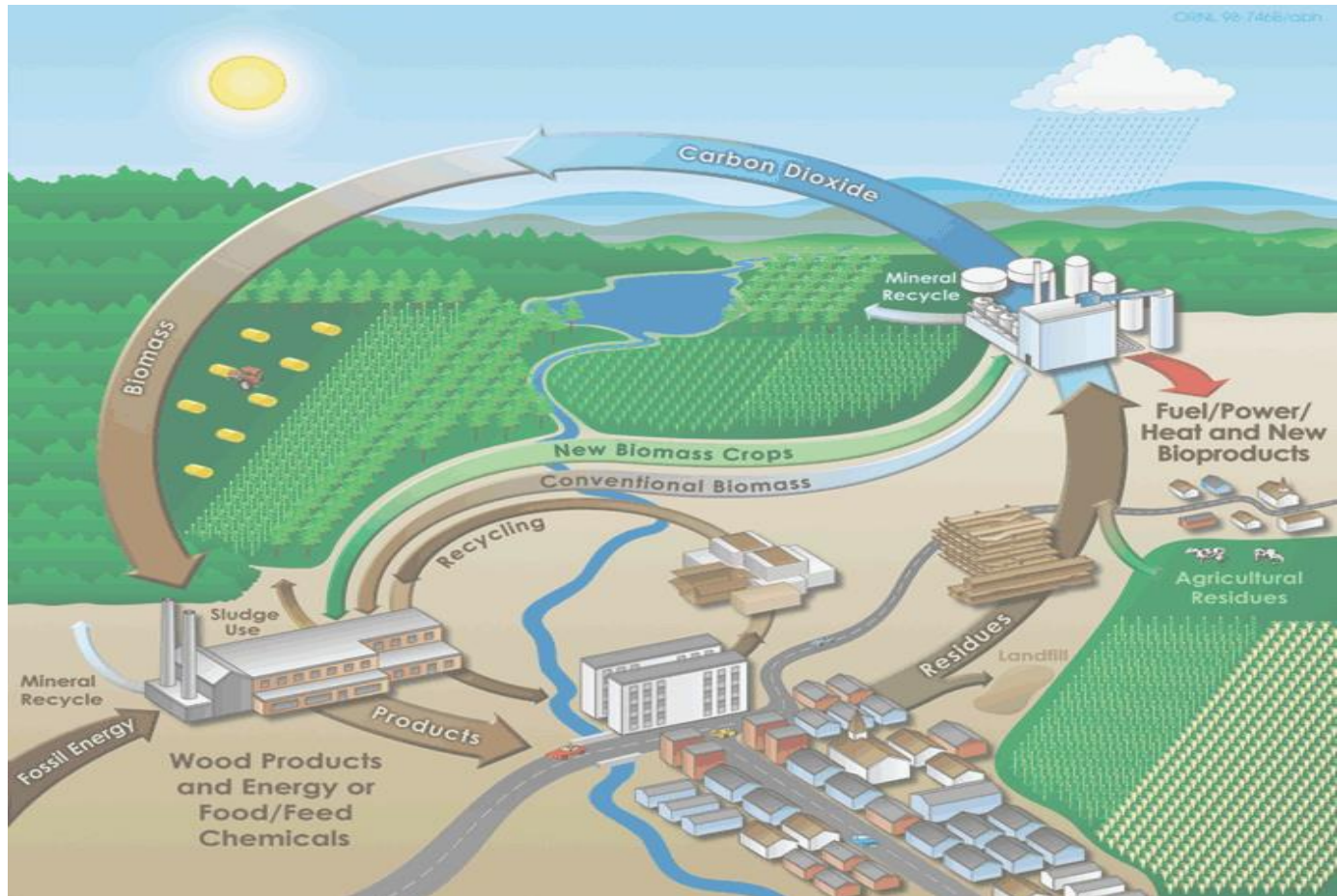
Bioeconomy



European



The bioeconomy as an integrated system



The importance of the bioeconomy

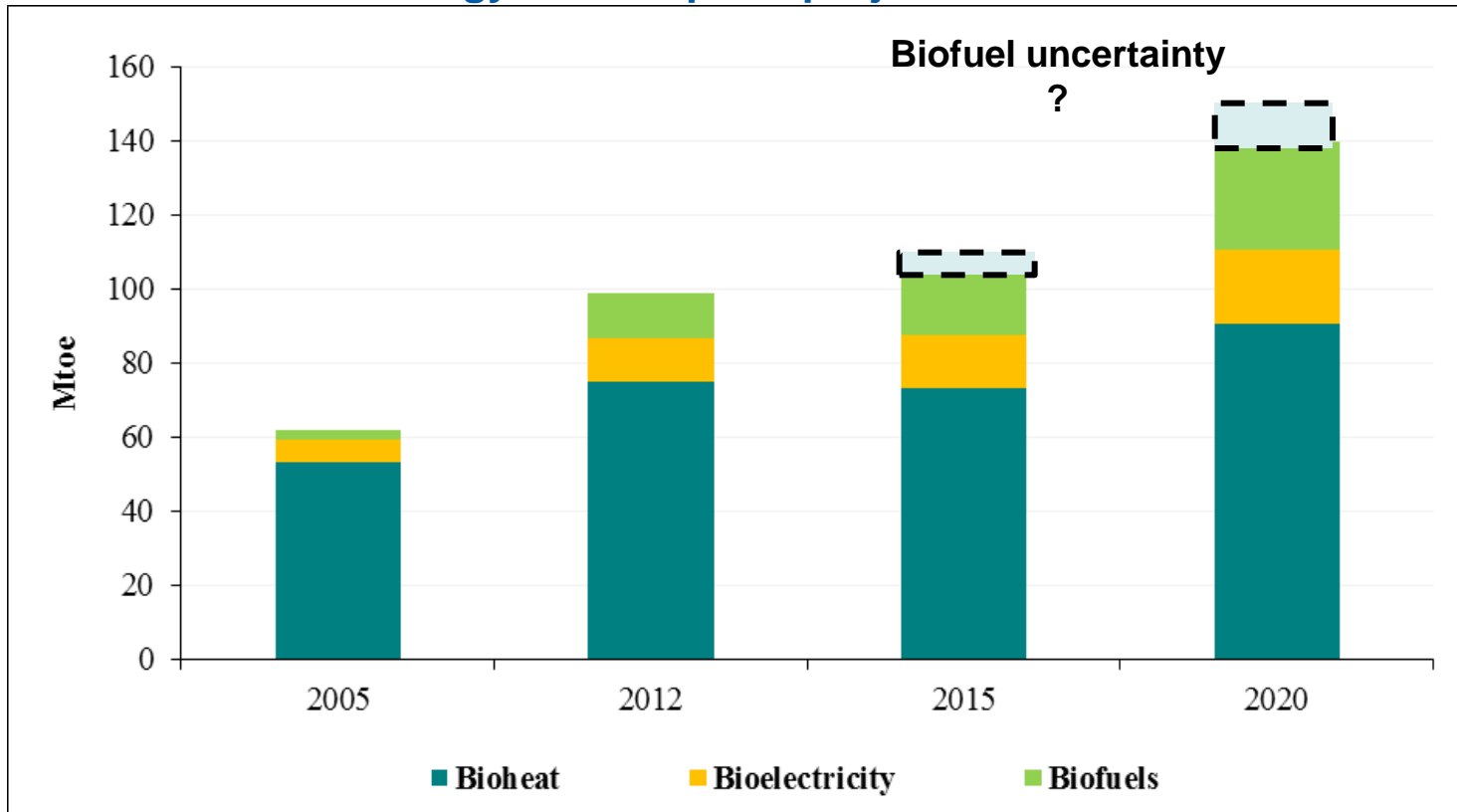
(1) Food security

"3 meals away from social breakdown" ?

The importance of the bioeconomy

(2) Energy security

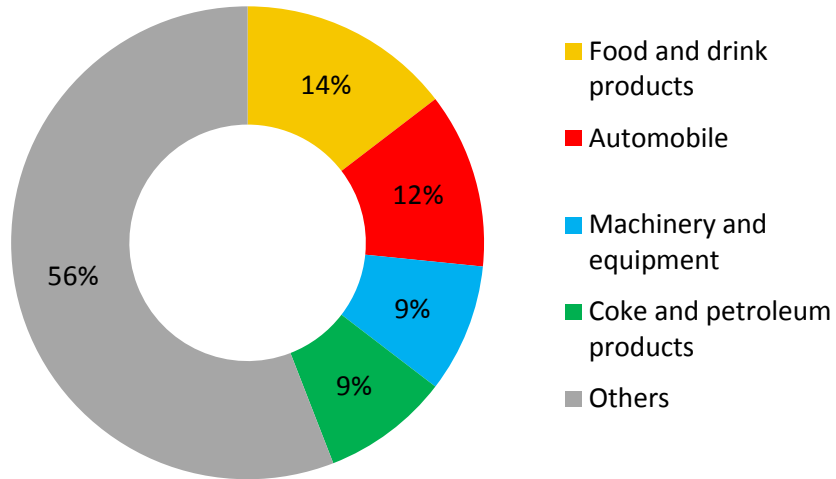
Bioenergy consumption projection to 2020



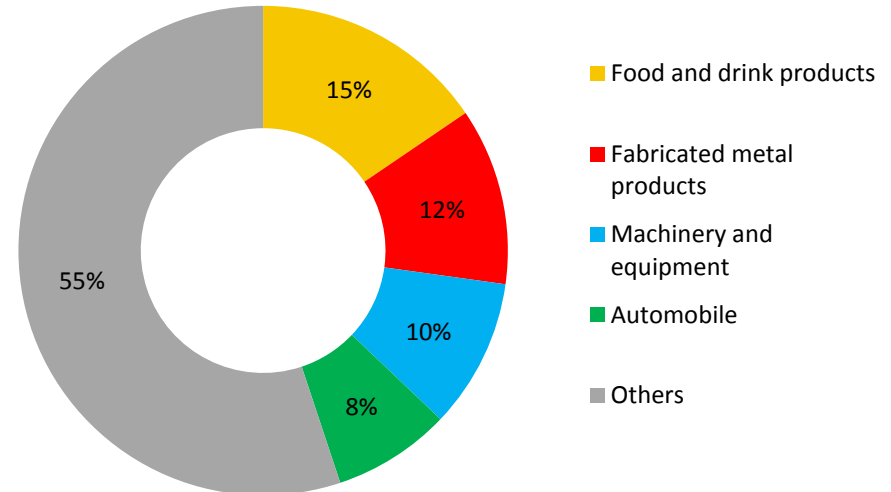
The importance of the bioeconomy

(3) The re-industrialisation of Europe

Share of turnover in the EU manufacturing industry (%)



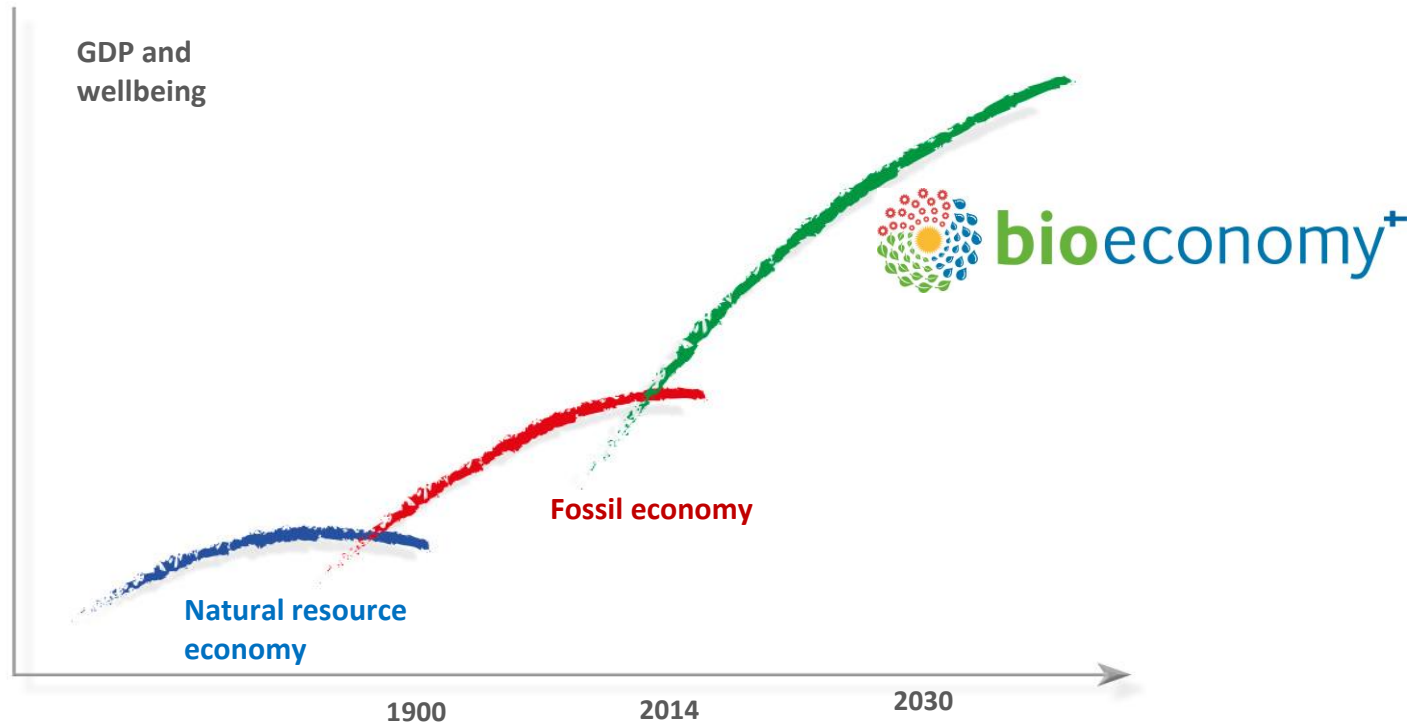
Share of employment in the EU manufacturing industry (%)



Adapted from FoodDrinkEurope

The importance of the bioeconomy

(4) Reducing dependence on fossil



Bioeconomy – the big picture



- **Worldwide, the bioeconomy race is on!**
 - According to Pike Research almost 1800 biorefineries to be commissioned globally until 2022 (e.g. US, Brazil, China, Malaysia, India, Thailand);
 - \$1.4 billion of public funding was allocated to the development of advanced biofuels in the US in 2011;
- **Third country investments strongly focused on conventional biorefineries using food crops;**
- **EU focuses on advanced biorefineries that use agricultural and forestry residues and biowaste fractions, while respecting sustainability criteria and creating growth and jobs at regional level.**

Swedish Research and Innovation Strategy for a Bio-based Economy



Prioritäten in der Bioökonomie-Forschung
Empfehlungen des BioÖkonomie-Rats

Wetenschappelijke en Technologische Commissie voor de Biobased Economy

Kennis- en innovatieagenda voor de biobased economy

Naar groene chemie materialen

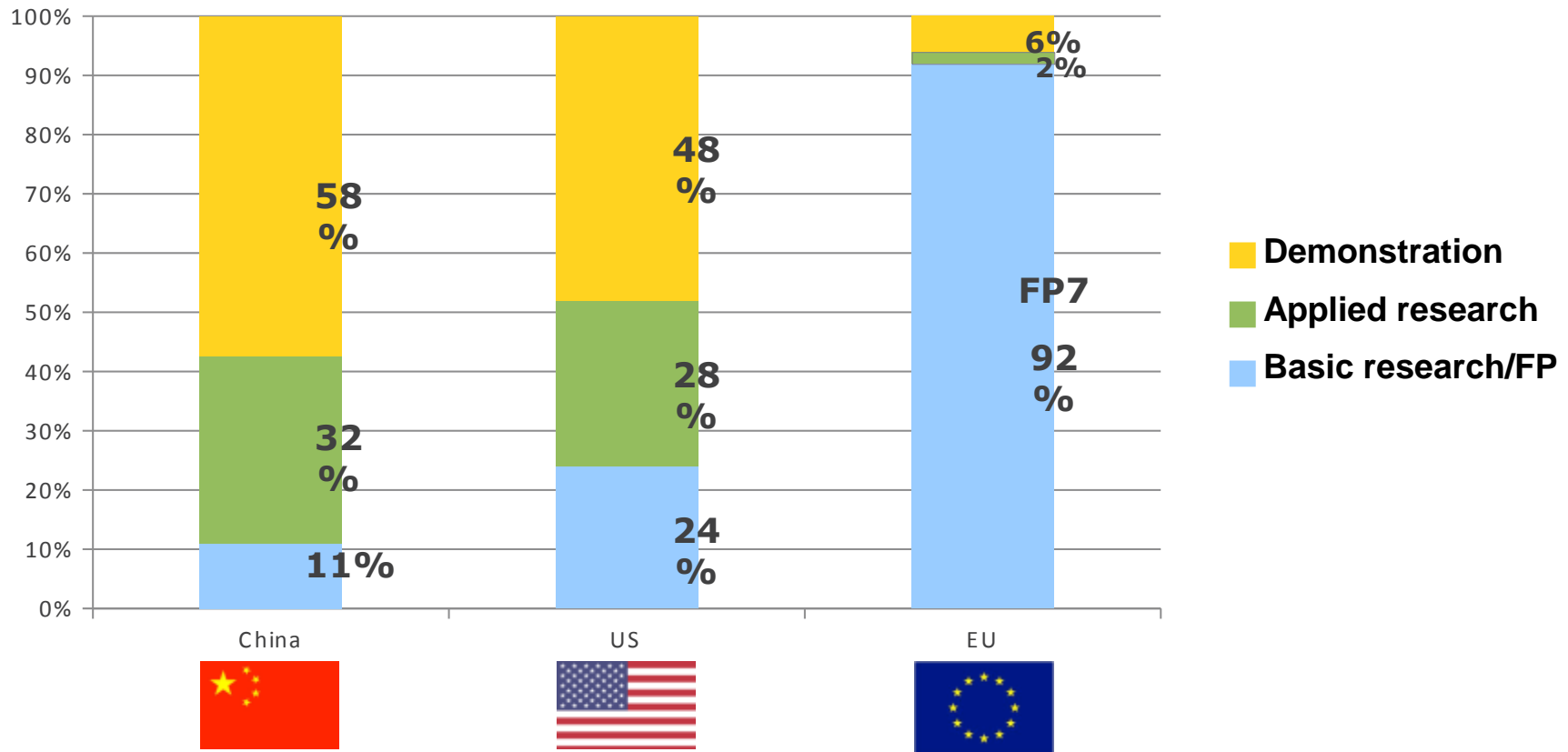
Innovating for Sustainable Growth

A Bioeconomy for Europe

Research and Innovation

Can Europe make the difference?

European technology is deployed in China and US



Source: Bio-based Industries Consortium (BIC), <http://cordis.europa.eu/erawatch>, OECD "Research & Development Statistics"

Bottlenecks

Primary production

- Total productivity factor
- Post-harvest losses

Bio-based industries

- The biomass availability
- Market making

Food industry

- Ensuring security of supply
- Resource efficiency

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European
Commission

A Bioeconomy for Europe

Using resources from land and sea
for a post-petroleum economy



European
Commission

STRATEGY

TACKLING SOCIETAL CHALLENGES

- Ensuring food security
- Managing natural resources sustainably
- Reducing dependence on non-renewable resources
- Mitigating and adapting to climate change
- Creating jobs and maintaining European competitiveness

DEVELOPING A BIOECONOMY

- Coherent policy
- Investment in knowledge, innovation and skills
- Participative governance and informed dialogue with society
- New infrastructures and instruments

ACTION PLAN

INVESTMENTS IN
RESEARCH,
INNOVATION AND
SKILLS



REINFORCED POLICY
INTERACTION AND
STAKEHOLDER
ENGAGEMENT



ENHANCEMENT OF
MARKETS AND
COMPETITIVENESS IN
BIOECONOMY
SECTORS

Bioeconomy Strategy And Action Plan



The Strategy "**Innovating for Sustainable Growth: a Bioeconomy For Europe**" promotes sustainable production of renewable resources from land and sea and their conversion into food, bio-based products, biofuels and bioenergy.

**INVESTMENTS IN RESEARCH,
INNOVATION AND SKILLS**

**REINFORCED POLICY INTERACTION
AND STAKEHOLDER ENGAGEMENT**

**ENHANCEMENT OF MARKETS AND
COMPETITIVENESS IN BIOECONOMY
SECTORS**

EU Institutions

Member States
and Regions

Stakeholders
public & private sectors

International
partners &
organisations



Pillar 1: investments in research, innovation and skills

- **Research funding and coordination (EU, national, regional, private)**
- **Horizon 2020**
- **Skills and educational curricula**



HORIZON 2020

Societal Challenge 2:

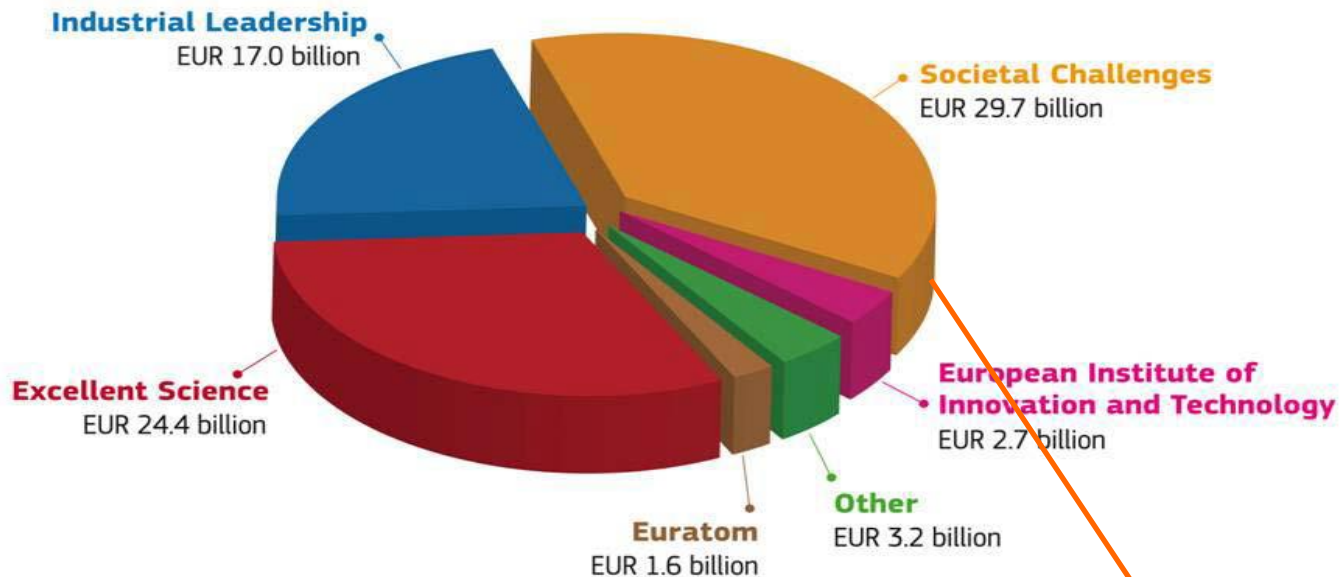
**Food Security,
Sustainable Agriculture and Forestry,
Marine and Maritime and Inland Water
Research, and the Bioeconomy**



HORIZON 2020

HORIZON 2020

HORIZON 2020 BUDGET (EUR 78.6 billion, current prices)



Biggest EU investment in Research and Innovation

SC2 : Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and inland waters research, and the BIOECONOMY
> €3,8 billion , more than double of FP7 budget

Europe 2020

Innovation Union

European
Research Area

Horizon
2020

Responding to
the economic
crisis by
investing in
**future jobs
and growth**

Addressing
**people's
concerns** about
their livelihoods,
safety and
environment

Strengthening
the **EU's global
position in
research,
innovation and
technology**

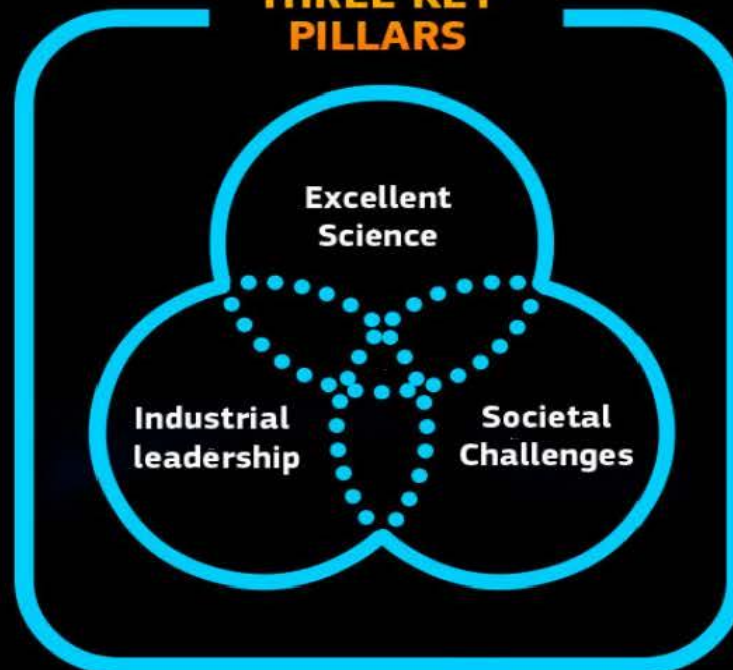
 **H2020 is designed to help bring ideas to the market**

- **A single programme** bringing together three separate programmes/initiatives*
 - **Coupling research to innovation** – from research to retail, all forms of innovation
 - **Focus on societal challenges** facing EU society, e.g. health, clean energy and transport
 - **Simplified access**, for all companies, universities, institutes in all EU countries and beyond
 - **Bringing ideas to market**
- * The 7th Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)

THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

THREE KEY PILLARS



Research and
Innovation

Priority 3. Societal challenges



**Tackling
societal
challenges
for a better
society**



1. Health, demographic change and wellbeing

2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy

3. Secure, clean and efficient energy

4. Smart, green and integrated transport

5. Climate action, resource efficiency and raw materials

6. Inclusive, innovative and reflective societies

7. Secure societies

Societal Challenge 2:

Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the Bioeconomy

Objectives:

- Sufficient supplies of safe and high quality food and bio-based products,
- Productive, resource-efficient and resilient primary production systems, fostering ecosystem services, while protecting biodiversity
- competitive and low carbon supply, processing and marketing chains

The SME Instrument

PHASE I

Concept &
Feasibility
Assessment

PHASE II

Demonstration
Market
Replication
R&D

PHASE III

Commercialisation

New, cross-disciplinary skills are needed to...

...promote activities which can look at our ecosystems in a sustainable way (less energy, less water, less land, ...)



...promote and valorise innovation (new services and new business models)

...deliver territorial approaches in a new systemic way (networks)



Pillar 2: reinforced policy interaction and stakeholder engagement

- **European Bioeconomy Panel**
- **Bioeconomy Observatory**
- **Support development of national/regional bioeconomy strategies**
- **Synergies of funds**
- **Stakeholders Fora**

The European Bioeconomy Panel

- **Aim: to support interactions amongst different policy areas, sectors and stakeholders in the bioeconomy**
- **Holistic, systemic approach**
- **30 members: producers, enterprises and industry (11); public administrations (9); universities and research (8); and civil society (2 members)**
- **Established in 2013, met twice, produced 2 reports**
- **Panels at national and regional levels?**

The Bioeconomy Observatory

- **To observe the Bioeconomy in Europe:
science and technology watch, policy watch, market watch**
- **The need for better information and data**
- **Managed by the European Commission's Joint Research Centre**
- **3 year project to establish Observatory – 1st outputs
February 2014 (web-site)**
- **To collect information and monitor the development of the
bioeconomy in research and innovation, policy, and markets**

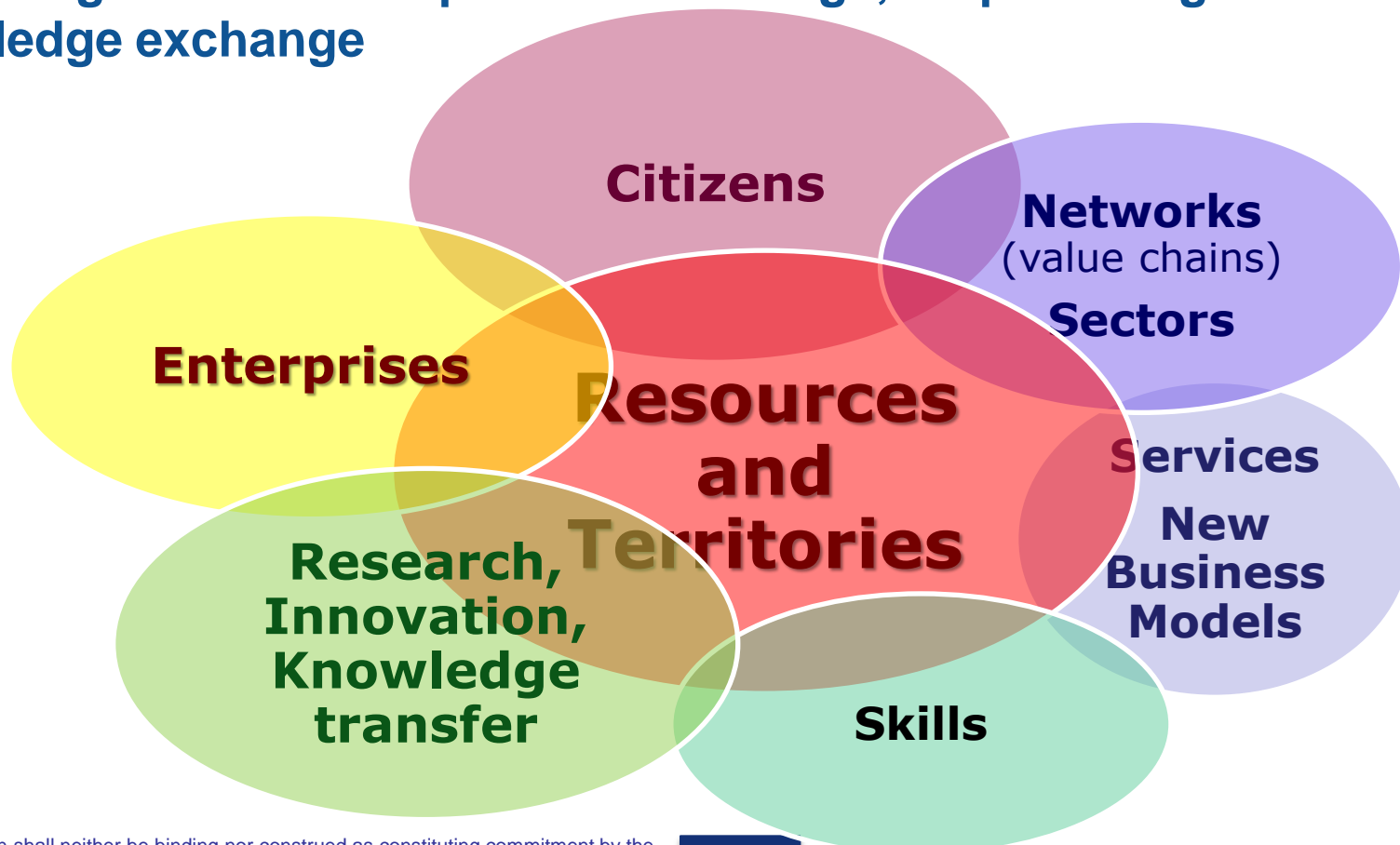
Horizon 2020 and ESIF: co-funding synergies

- bringing together funds in the same project - a single action or a group of coordinated actions
- Through successive projects that build on each other
- Through parallel projects that complement each other

**no double
funding in
the same
expenditure
item**

A Smart Specialisation

Enterprises as well as territories concentrating resources on the most promising areas of competitive advantage, emphasizing an inter-sectoral knowledge exchange





Pillar 3: enhancement of markets and competitiveness in bioeconomy

- **Public-Private Partnership for Bio-based industries**
- **Market instruments for uptake of bio-based products**
- **Green public procurement**

Bio-based Industries Joint Undertaking



Public Private Partnership supporting R&I for bio-based industries:

- **Partners:** European Commission and Biobased Industries Consortium (BIC)
- **Budget:** € 3.705 billion (about 75% from industry)
- **Implementation:**
 - Principles of openness, transparency and excellence
 - Horizon 2020 rules for participation
- **Objectives:** New bio-based value chains for Europe, based on 2nd generation/advanced biorefineries.

The screenshot shows the homepage of the Bio-based Industries Joint Undertaking website. At the top, there is a navigation bar with a 'Contact' button. Below this, a banner features the BBI logo and the text: 'BBI Joint Undertaking: a new €3.7 billion partnership between the EU and the Bio-based Industries Consortium'. A secondary navigation bar includes links for 'Home', 'About BBI', 'Participate', 'News', 'Events', and 'Multimedia'. The main content area is divided into three sections: a large image of a field with hay bales, a blue box with the text 'Welcome to the BIO-BASED INDUSTRIES Joint Undertaking' and '€3.7 billion to convert biological residues and wastes into greener everyday products', and three smaller images labeled 'About BBI', 'Participate', and 'Partnering Platform'. At the bottom, there are sections for 'News', 'Twitter', and 'Events'. The 'News' section has a date of '09 July 2014' and a headline 'EU and Industry Partners Launch €3.7 Billion Investments in the Renewable Bio-based'. The 'Twitter' section shows a tweet from 'Resource Media Ltd' with the handle '@resource_media' and a date of '11 Jul'. The 'Events' section has a date of '02 Sep' and a headline '02 September 2014 BBI Info Day in Brussels'.

www.bbi-europe.eu



Objectives: Integrated value chains

Feedstock

Fostering a sustainable biomass supply and building new value chains

Biorefineries

Optimising efficient processing through R&D and upscaling in large-scale demo/flagship biorefineries

Markets, products and policies

Developing markets for biobased products and optimising policy frameworks



The Bioeconomy Strategy - through policy interaction and stakeholder engagement, coherent investments in Research and Innovation and market enhancement measures -

Provides A New Boost for Jobs, Growth and Investment for Europe

Addresses main challenges our societies are called to tackle, including energy- and food-security, and climate change

Fosters European Industries competitiveness with targeted initiatives, reinforcing the internal market



An Agenda for Jobs, Growth, Fairness and Democratic Change

A New Boost
for Jobs,
Growth and
Investment:

A Deeper and
Fairer Internal
Market with a
Strengthened
Industrial Base

A Resilient
Energy Union
with a
Forward-
Looking
Climate
Change Policy

...

**Innovating for a sustainable growth:
a bioeconomy for Europe**

From strategy to delivery:

Where do we need to focus now?

- ✓ **Creating the right conditions for investment**
- ✓ **Think regional and local**
- ✓ **Integrate the maritime dimension**



And finally . . .

- **Bioeconomy Stakeholder Conference, Turin, 7-9 October 2014**



Italian Presidency
of the Council
of the European Union



BioEconomy Stakeholders' Conference

"From sectors to system, from concept to reality"

<http://bioeconomy.miur.it/>

- **More info on the Bioeconomy at:**
<http://ec.europa.eu/research/bioeconomy>
- **More info on EU2020 and Horizon 2020 at:**
http://ec.europa.eu/europe2020/index_en.htm
http://ec.europa.eu/research/horizon2020/index_en.cfm
- **More info on the Bio-Based Industries JU**
www.bbi-europe.eu
- **More info on EU Budget – Myths and Facts:**
http://ec.europa.eu/budget/explained/myths/myths_en.cfm



Thank you for your attention!

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