



# The EU bioeconomy scenario and policy developments on biofuels

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Scaling Up Conference



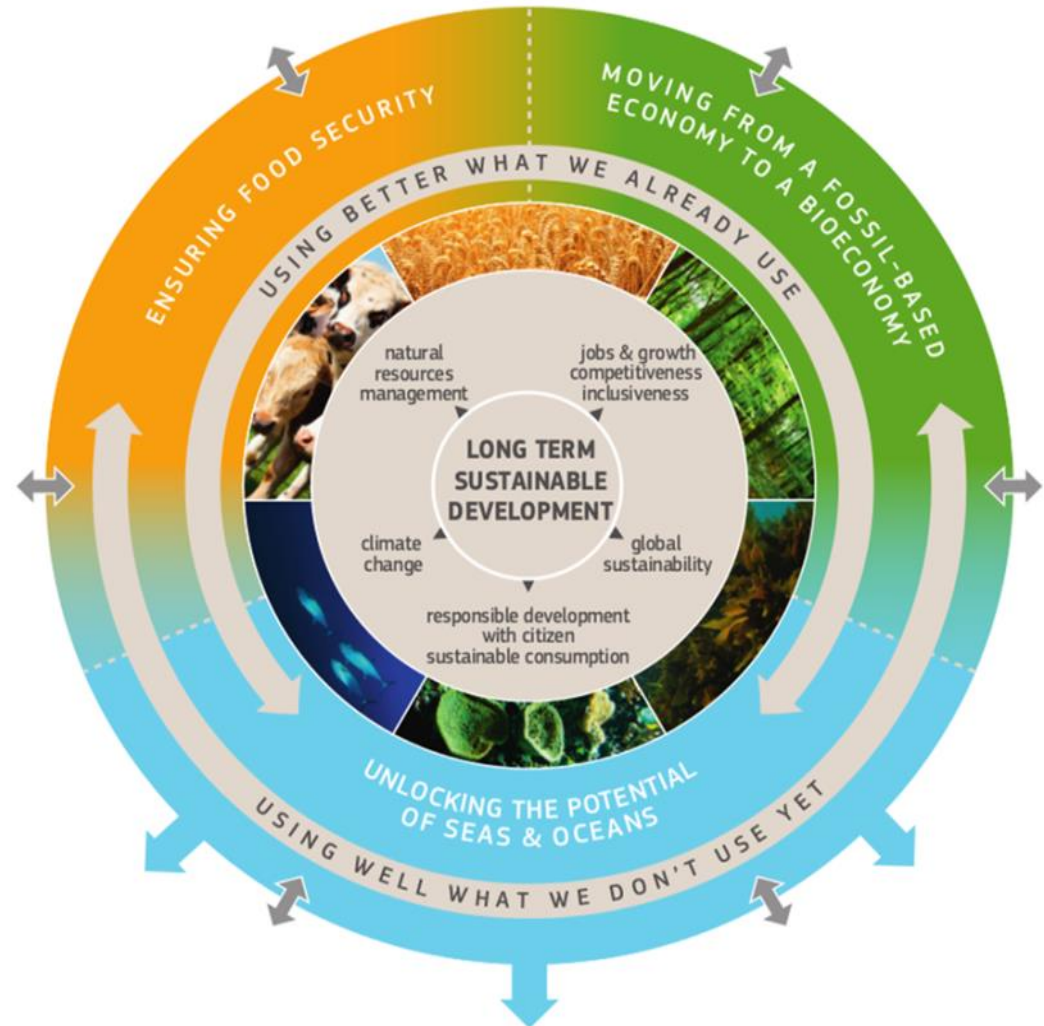
# **Scaling up in EU: Policies and projects**

# EU Bioeconomy Strategy (2012)

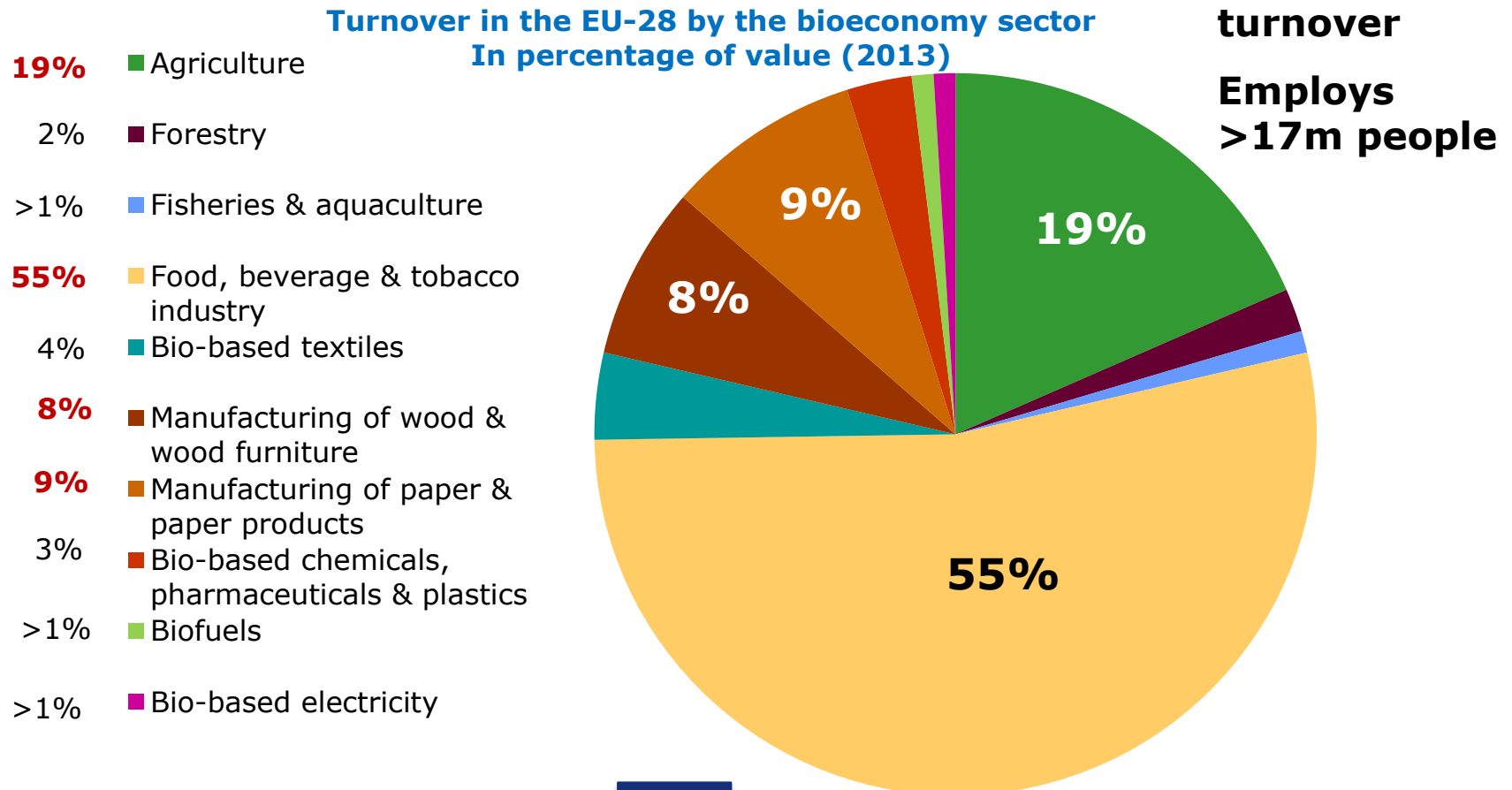


" The Bioeconomy encompasses those parts of the economy that use renewable biological resources from land and sea to produce food, bio-materials, bio-energy and bio-products."

*EU Bioeconomy Strategy, 2012*



# Bioeconomy is key for Europe



# EU Bioeconomy Strategy & Action Plan

## Investment in R&I and skills



- **Horizon 2020 (€3,8b SC2)**
- Increase multi-disciplinary & cross-sectoral R&I
- ESIF - Smart Specialisation
- EFSI

## Policy interaction & stakeholder engagement



- EU Policy coherence
- Development of regional and national bioeconomy strategies
- Bioeconomy Panel
- Bioeconomy Observatory
- International cooperation

## Enhancement of markets & competitiveness in bioeconomy



- Sustainable intensification of primary production
- Expansion of new markets
- Increase EU competitiveness
- **BBI JU**



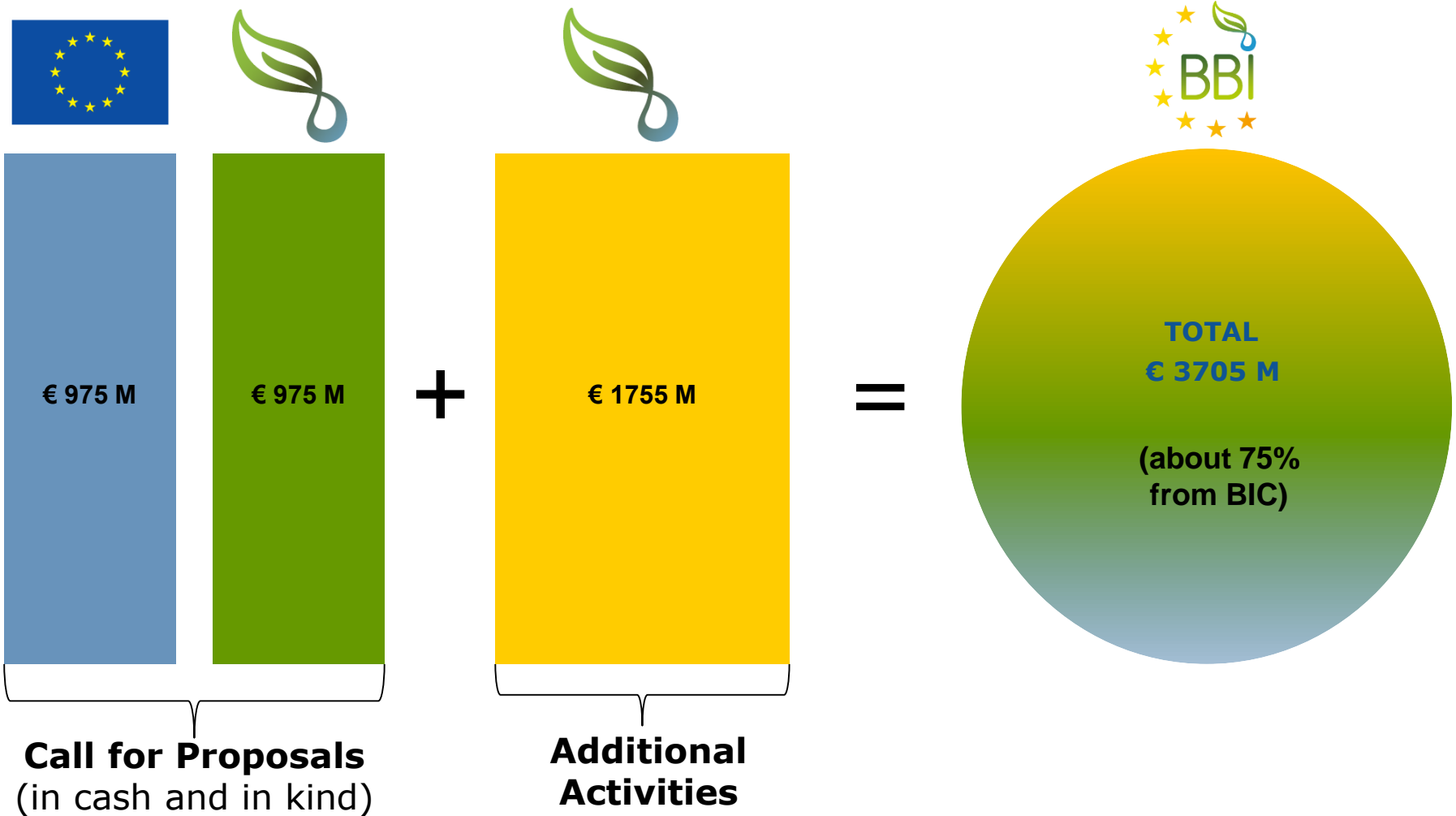
**Partners:** European Commission and Bio-based Industries Consortium (BIC)

**Budget:** €3.705 billion (about 75% from industry)

**Implementation:**

- 36 projects on-going

# BBI JU Budget



## Focus of the BBI JU

### *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 bio-based products and optimising policy frameworks



# An EU action plan for the Circular Economy

**Clear targets for reduction of waste and establish an ambitious and credible long-term path for waste management and recycling.**

## **Key measures:**

- ❖ **A common EU target for recycling 65% of municipal waste by 2030;**
- ❖ **A common EU target for recycling 75% of packaging waste by 2030;**
- ❖ **A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030;**
- ❖ **A ban on landfilling of separately collected waste;**



European  
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# Climate and energy: where do we stand?

2008/2009

2011

2014

The EU climate  
and energy  
package

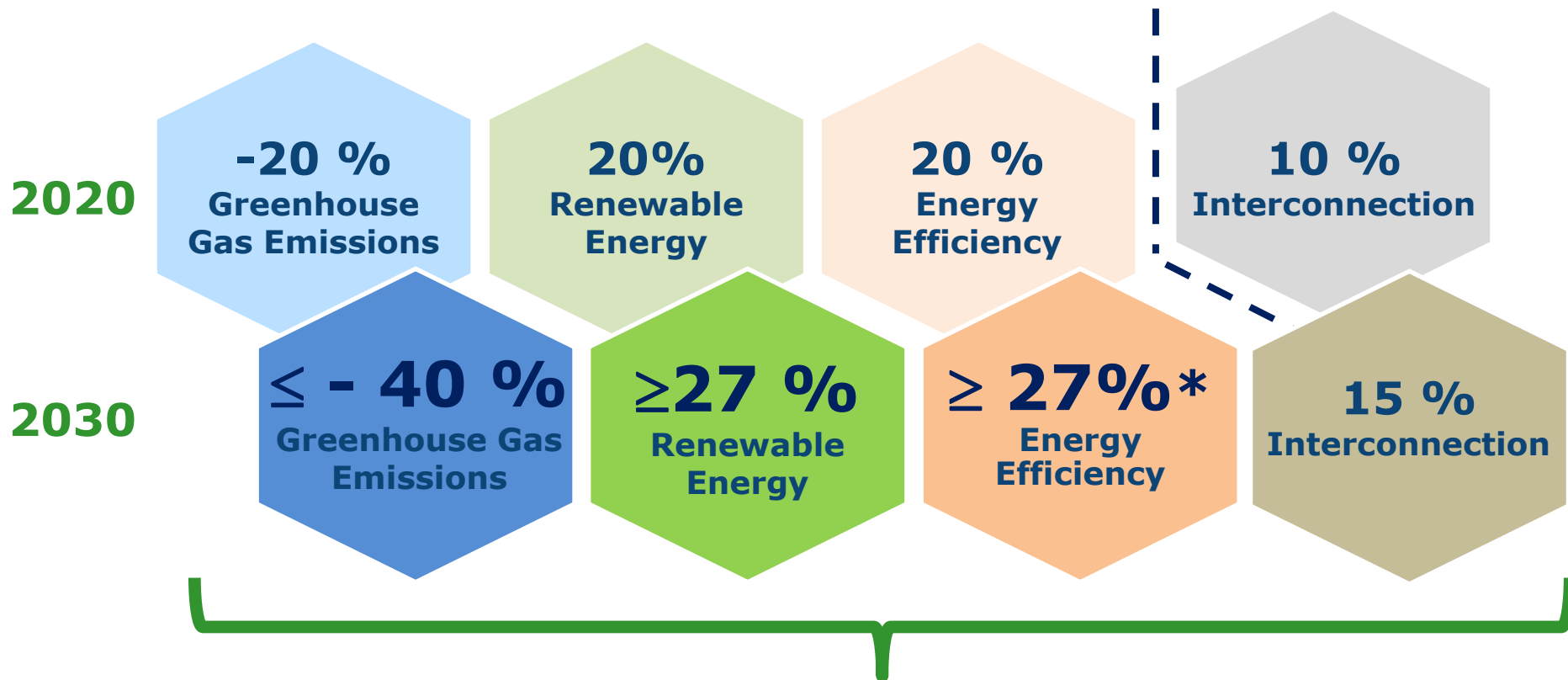


Energy  
roadmap 2050



European  
Commission

# Agreed headline targets 2030 Framework for Climate and Energy



**New governance system + indicators**

\* To be reviewed by 2020, having in mind an EU level of 30%

# European Council Conclusions:

## 2030 Framework for Climate and Energy (October 2015):

.....it is important to ***reduce greenhouse gas emissions*** and ***risks related to fossil fuel dependency*** in the transport sector.

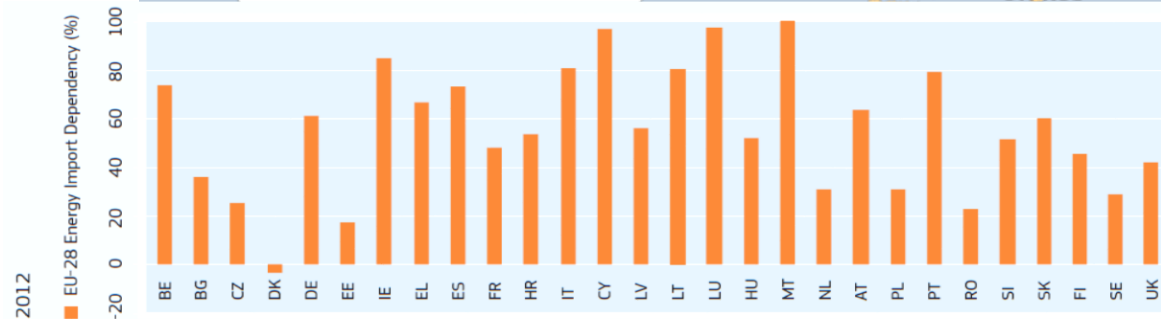
...The European Council therefore invites the Commission to further examine instruments and measures for a ***comprehensive and technology neutral approach*** for the promotion of emissions reduction and energy efficiency in transport, for electric transportation and for ***renewable energy sources*** in transport also after 2020.

# The European Union Energy System



## Diverse and fragmented

- + 28 Member States
- + EU legal framework but national regulations
- + Different energy production sources
- + Different histories, INCO relationship, sources of imports and dependencies
- + Different political priorities (green, shale gas, etc.)
- + Liberalisation makes good but unequal progress
- + Missing corridors between countries



Energy

# The Energy Union's 5 dimensions

1. Energy security, solidarity and trust,
2. A fully integrated internal energy market,
3. Energy Efficiency first,
4. Transition to a long-lasting low-carbon society,
5. An Energy Union for Research, Innovation and Competitiveness.

5

GUIDING  
DIMENSIONS

By the end of 2016 we aim to have in place all legislation necessary to complete the Energy Union and being implemented on the post-2020 period including

- **Communication on decarbonisation of transport**
- **a revised Renewable Energy Directive and bioenergy sustainability policy for 2030, focusing on a cost-effective, sustainable and actual delivery of a RES share of at least 27% in the EU in 2030 (30th of November 2016)**



The Strategic Energy Technology (SET) Plan is the **technology pillar of the EU's energy and climate change policy**

- **European Industrial Bioenergy Initiative (EIBI):**  
Update to the Implementation Plan for 2013-2015 (2013)  
+ European Biofuels Technology Platform (EBTP)

## Coordinating research and innovation across Europe – 10 actions



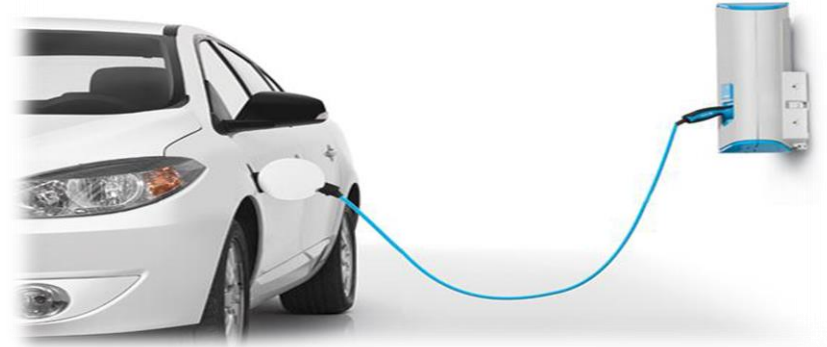




# The Integrated SET Plan – main actions

## Sustainable transport

Become competitive in the global battery sector



Renewable fuels needed for sustainable transport solutions



# Setting targets and implementing the SET Plan



- The SET Plan has built strong collaboration and commitment among EC, the MS and research and industrial actors through a highly participatory process.
- We are commonly setting R&I priorities with the aim to maintain – or regain in some cases – the EU's global leadership in low-carbon technologies and solutions, and support climate change policies.

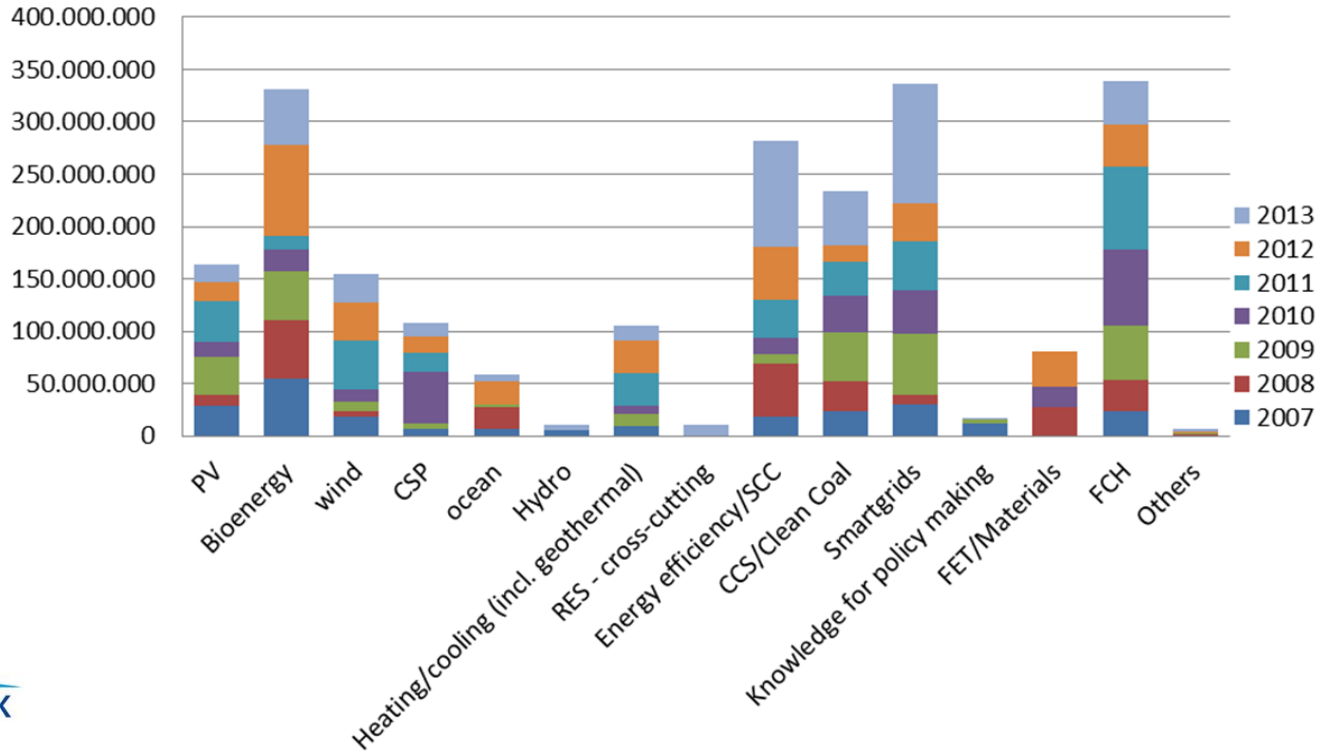




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# Implementation: FP7 2007-2013

FP7 Energy Theme - budget allocation per year (2007-2013, M€)



FP7: 50.5 bEur total funding (7 years)

Energy: 2.5 bEur (5%)

Investments R&I accross EU

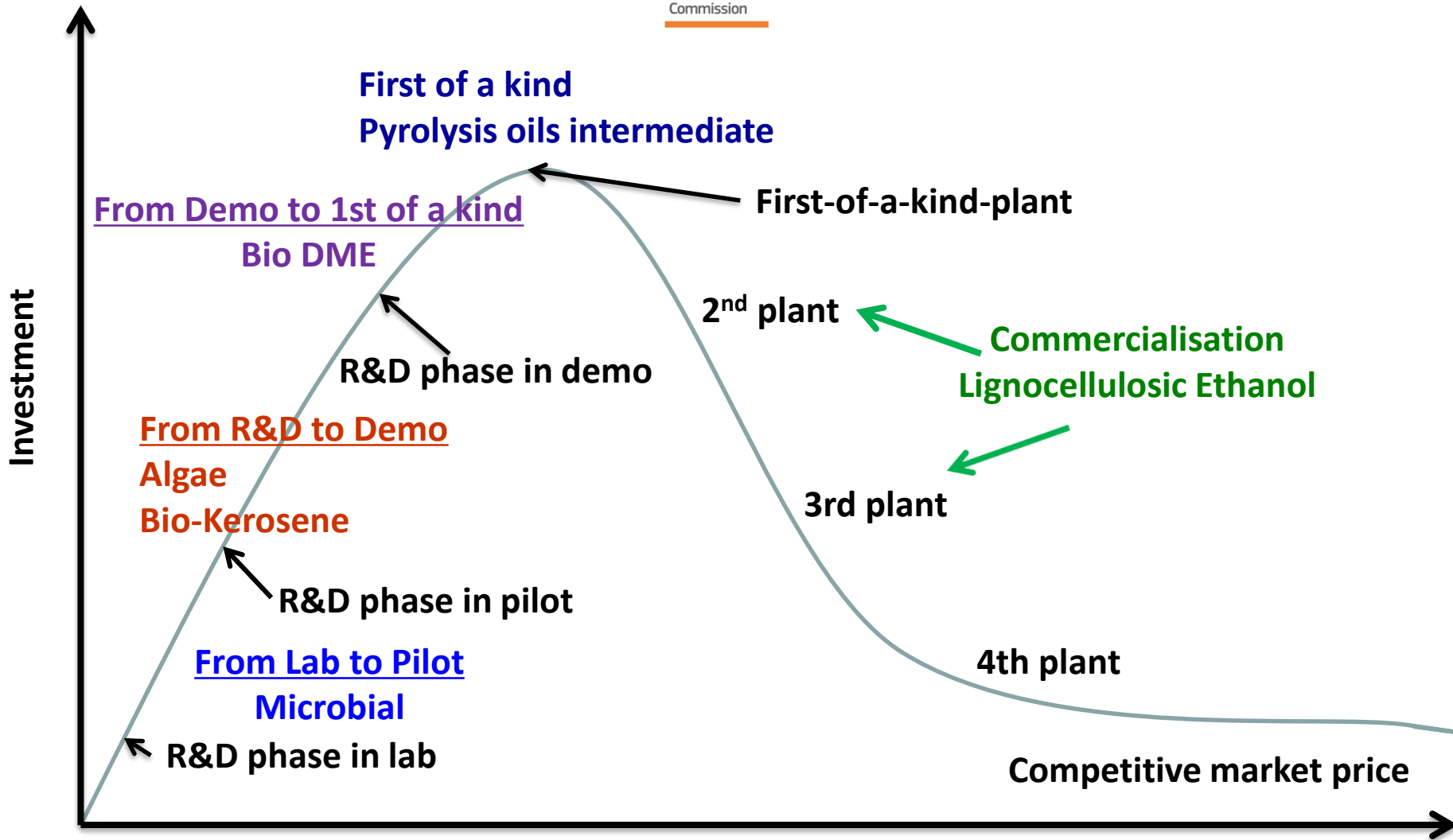
EUR 2.8bn

(2007)

EUR 7.1bn

(2011)

# Technology Valley of death: Positioning of FP7 supported technologies



# Financing

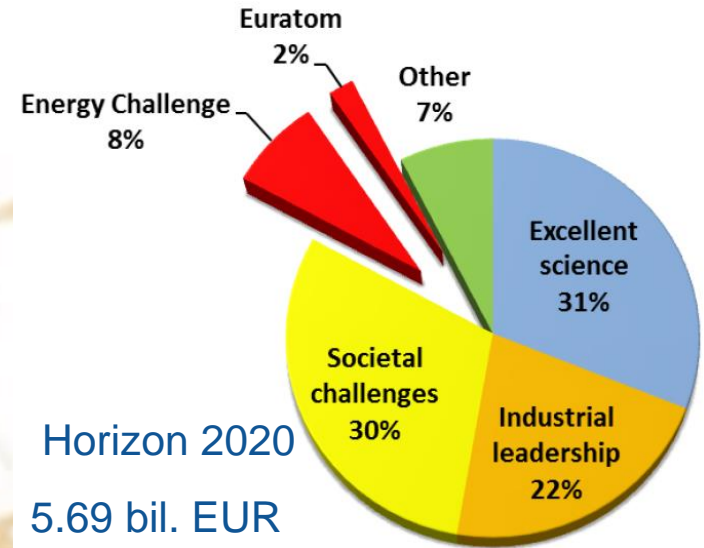


***Develop and bring innovations to the market***

***Overcome 'valley of death'***

***Better articulation of funding sources: H2020, EFSI, ESFI...***

***Create demand for innovative products and services: adding market pull to technology push***



InnoFin

Cohesion policy  
38 bil. EUR – low carbon economy  
40 bil. EUR – R&I  
33 bil. EUR - SMEs

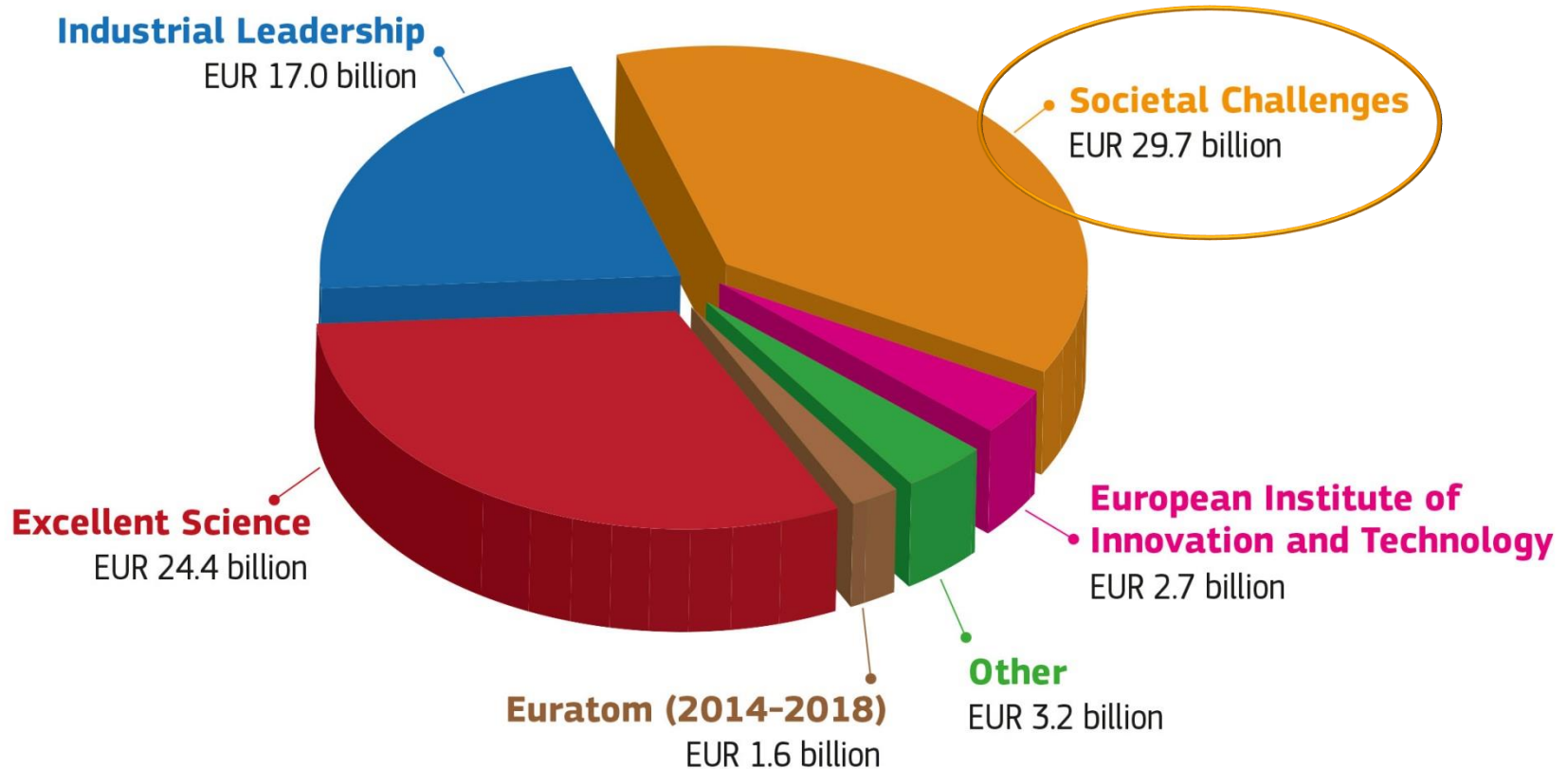


THE EU FRAMEWORK PROGRAMME  
FOR RESEARCH AND INNOVATION

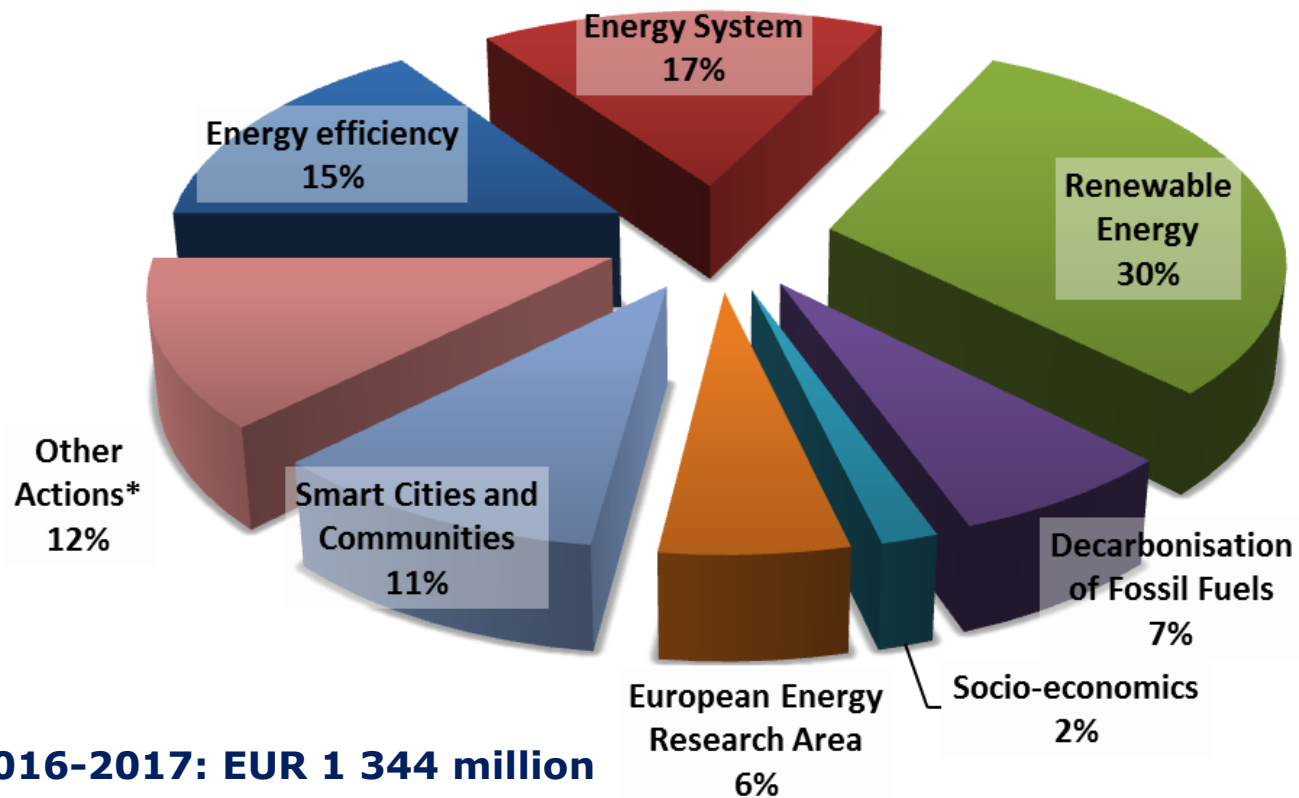
HORIZON 2020



# H2020 Budget: 79 billion € from 2014 to 2020 (in current prices)



# Indicative budget distribution per area for Energy calls 2016-2017



**Total budget 2016-2017: EUR 1 344 million**

\* **Other Actions** = actions not implemented through calls for proposals (e.g. Risk Finance, procurements, subscriptions, contributions, grant to identified beneficiaries)

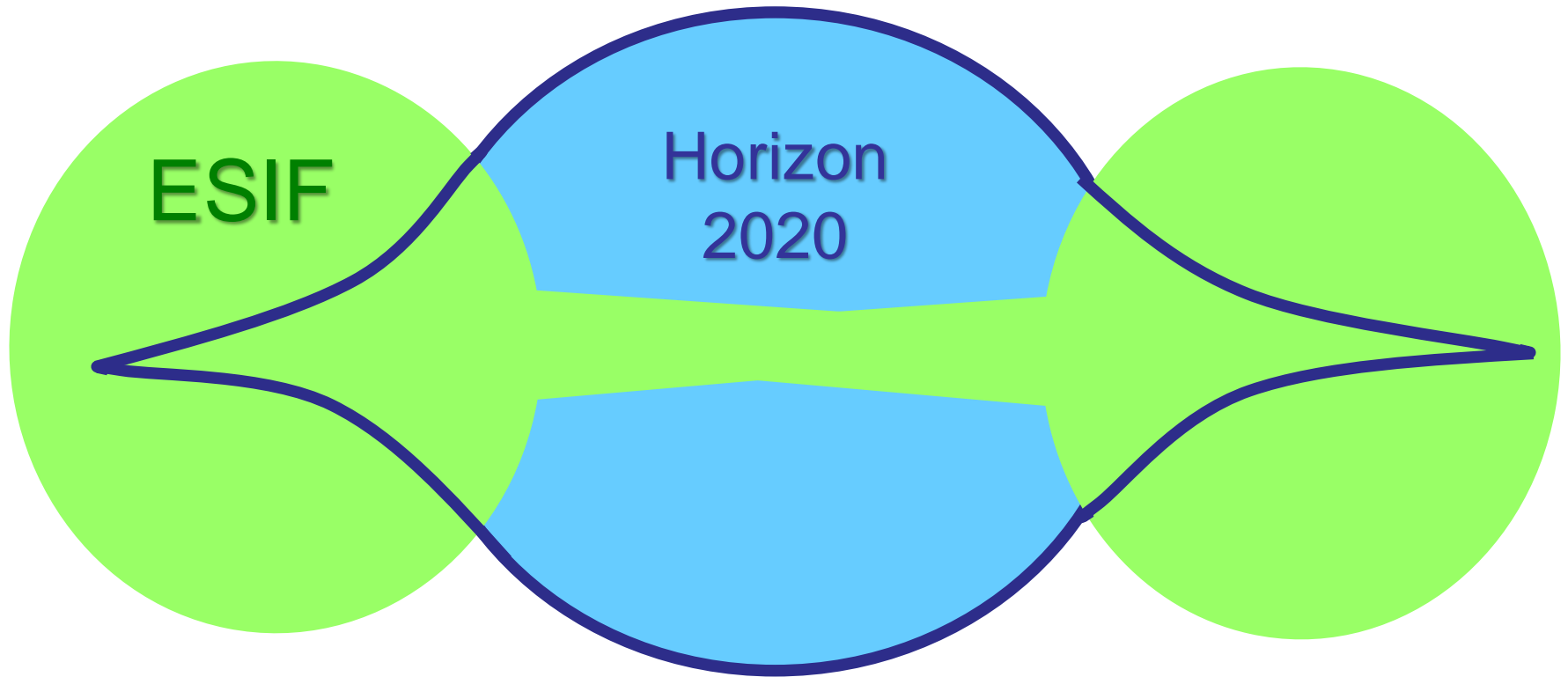




# Implementation MS: Regional policy (I)

European Commission

## Synergies through sequential or parallel projects



"Staircase to Excellence"

National /  
Regional R&I  
systems

Capacity  
Building

"Research  
Excellence"

Research & Development

Hopefully also excellence, but  
"Innovation Excellence"

Innovation

Market

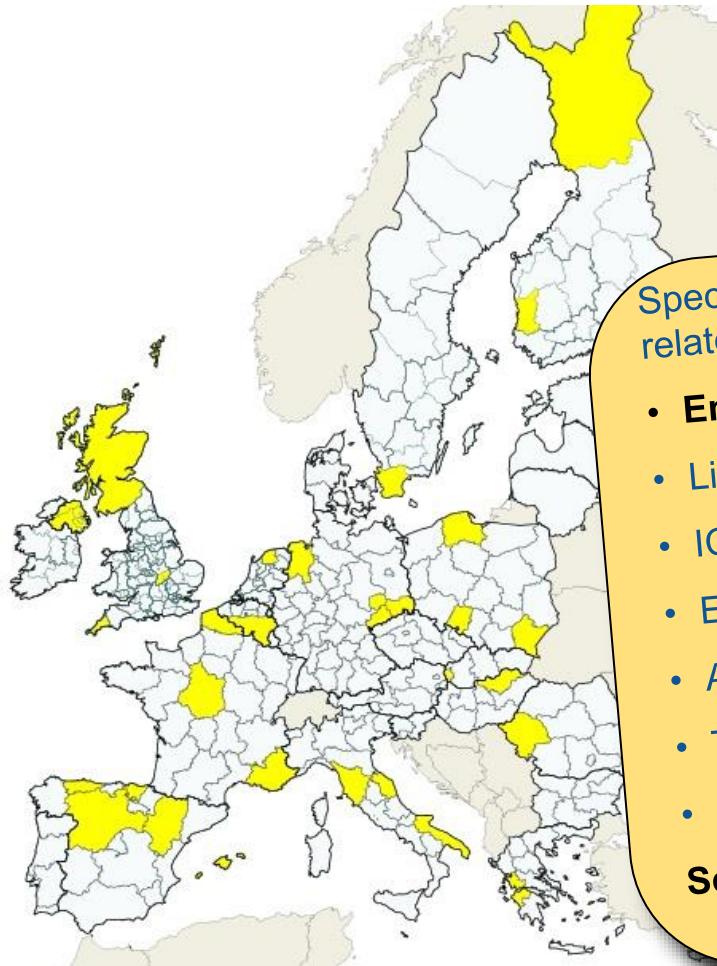


European  
Commission

# Implementation MS: Regional policy (II)

## Check out the smart specialisations:

RIS3 mapping of regions' and MS intentions in terms of smart specialisation fields allows to detect possible partners:



Capabilities 2 Target Market 2 EU Priority 2  
Select Select Select

Region Name Desc Add Priorities Region

Search

Specialisation fields are emerging that are related to:

- Energy – top priority : 2/3 of regions !!!
- Life science
- ICT
- Environment
- Agro-food
- Tourism
- New materials

Scope for cooperation and fine-tuning!

### Target Markets

Agriculture, forestry and fishing  
Fishing and aquaculture

Manufacturing and industry  
Food, beverage and tobacco products

Tourism, restaurants and recreation

Manufacturing and industry  
Computer, electronic and optical products

Transporting and storage

See: <http://s3platform.jrc.ec.europa.eu/eye-ris3;jsessionid=87skR80JmqXZLIWhxL8ZvYH9XYKGRtG62j2k1YVkcXQR0tRvWgQ!1058177620!136291>  
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## Key successes on advanced biofuels

- Biochemtex of Italy built the first commercial plant on **ethanol from lignocellulosics** at Crescentino, Italy. This was the first such plant on global scale.
- EU **enzyme** companies such as Novozymes, DSM and Abengoa are world leaders.
- Three **large scale algae production facilities** are under development in the EU. These will be the largest facilities built in the EU; 10 hectares each with a productivity of 90 dry matter ton algal biomass per hectare per year.
- The EMPYRO pyrolysis oil plant of BTG in the Netherlands is the first plant **to sign a long term supply contract** of the bio-oil to replace fuel oil.
- The CHEMREC Bio-DME project has been the first project to demonstrate the conversion of **black liquor to bio-dimethyl-ether**



## SET-Plan 2016 - CEE Conference

- ✓ **"Energy Union: Towards a transformed European energy system - Integrated Research, Innovation and Competitiveness strategy"**
- ✓ 30/11- 02/12/2016, Bratislava  
(Slovakia's EU Council Presidency)
- ✓ Unique platform to discuss synergic action of EU energy policy and research and innovation policy in transforming the energy system



***Thank you for your attention!***

***More information:***

***<http://ec.europa.eu/energy/renewables/>***

***[http://ec.europa.eu/research/bioeconomy/  
index.cfm](http://ec.europa.eu/research/bioeconomy/index.cfm)***

***[http://ec.europa.eu/environment/circular-  
economy/index\\_en.htm](http://ec.europa.eu/environment/circular-economy/index_en.htm)***