

Water, Energy and Environment in the scope of the Circular Economy

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What are the limitations of a Linear Economy?

- *lost value of materials and products*
- *scarcity of resources, volatile prices*
- *waste generated, environmental degradation & climate change*



What is a Circular Economy?

- *the value of products, materials and resources is maintained in the economy for as long as possible*
- *waste generation is minimized*



Circular Economy: expected benefits

- *growth & job creation/ up to +7% GDP*
- *boosting competitiveness and ensuring security of supply*
- *building economic and environmental resilience*
- *encouraging innovation*
- *reducing total annual Greenhouse Gas Emissions by 2-4%*

Key action areas



Production

Objectives

- provide incentives to boost circular product design
- innovative and efficient production processes

Key actions

- durability, reparability and recyclability of products – Ecodesign Directive, Extended Producer Responsibility
- best practices for waste management and resource efficiency in industrial sectors - BREFs
- industrial symbiosis, remanufacturing
- More coherent policy framework for products, tools for SMEs

Consumption

Objectives

- repair and reuse of products
- reliable information to consumers

Key actions

- better labelling: EU Eco-label, Environmental Footprint
- new forms of consumption – collaborative economy, digital platforms
- guarantees and action on false green claims
- independent testing programme to assess possible planned obsolescence
- Circular Economy criteria in Green Public Procurement

Waste management

Objectives

- improve waste management in line with the EU waste hierarchy
- address existing implementation gaps
- provide long-term vision and targets to guide investments

Key actions

- revised EU targets for recycling 65% of municipal waste and 75% of packaging waste by 2030
- new binding target to reduce landfill to a maximum of 10% of total waste by 2030
- improve waste management, new investments in recycling capacity, avoid overcapacity in incineration and mechanical-biological treatment
- ensure coherence between waste investments under EU Cohesion Policy and the waste hierarchy

Market for secondary raw materials

Objectives

- increase the use of secondary raw materials
- increase the use of recycled nutrients and water
- safely managed chemicals
- improve knowledge of material flows

Key actions

- EU regulation on fertilisers
- legislative proposal on minimum requirements for reused water
- quality standards for secondary raw materials
- analysis on the interface between chemicals, product, and waste legislation
- EU-wide electronic system for cross-border transfers of waste

Priority sectors

**Biomass &
Bio-based
Products**

Plastics

**Construction
& Demolition**

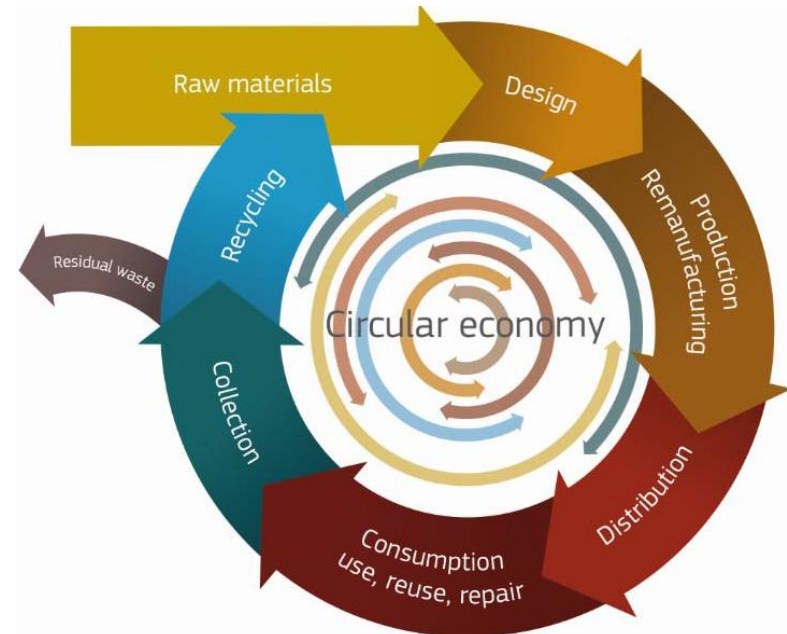
**Food
Waste**

**Critical
Raw
Materials**

What about Research and Innovation?

**Circular Economy is about Change,
and about Innovation**

requires **RTD&I investments,**
multi-stakeholder involvement
and an **enabling framework**



On the way to a more systemic approach

- **incremental** innovations
- single industries
- **silos**: low interactions between economic sectors
- **linear models**: extraction-process-disposal
- rebound effects



- ❖ no longer linear
- ❖ extended life time
- ❖ cross-sectors
- ❖ multi-stakeholders
- ❖ innovation in all forms
- ❖ design strategies
- ❖ new business models



Horizontal measures and monitoring in the Circular Economy Package

Objectives

- Create the **right environment for innovation** and **investments** in the circular economy.
- Measure progress

Key actions

- **€650 million Horizon 2020** initiative on 'Industry 2020 in the circular economy'.
- Pilot approach for "**innovation deals**" to identify and address potential regulatory obstacles for innovators.
- Targeted outreach for **various sources of EU funding**, in particular Cohesion Policy Funds.
- Development of a monitoring framework for the circular economy

THE HORIZON 2020 PROGRAM

Horizon 2020: addressing Europe's challenges

- ❖ Investing in research and innovation 2014-2020
- ❖ Budget of €77 billion
- ❖ Coupling research to innovation to maximise impact



Three priorities



Funding for Excellent science (€ million)

<i>European Research Council (ERC)</i> Frontier research by the best individual teams	13 095
<i>Future and Emerging Technologies</i> Collaborative research to open new fields of innovation	2 585
<i>Marie Skłodowska-Curie actions (MSCA)</i> Opportunities for training and career development	6 162
<i>Research infrastructures</i> <i>(including e-infrastructure)</i> Ensuring access to world-class facilities	2 390

Funding for Industrial leadership (€ million)

<i>Leadership in enabling and industrial technologies (LEITs)</i> (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)	13 035
<i>Access to risk finance</i> Leveraging private finance and venture capital for research and innovation	2 842
<i>Innovation in SMEs</i> Fostering all forms of innovation in all types of SMEs	589 + complemented by a minimum of 20% of the total budget for societal challenges + LEITs and 'Access to risk finance' with strong SME focus

Funding for Societal challenges (€ million)

Health, demographic change and wellbeing	7 257
Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy	3 708
Secure, clean and efficient energy *	5 688
Smart, green and integrated transport	6 149
Climate action, environment, resource efficiency and raw materials	2 956
Inclusive, innovative and reflective societies	1 259
Secure societies	1 613
<i>Science with and for society</i>	<i>445</i>
<i>Spreading excellence and widening participation</i>	<i>816</i>

* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)

Horizon 2020 implementation Statistics – Snapshot (July 2015)

- **Nearly 38,000 (full) eligible proposals** requesting a total of € 70.8 billion of EU contribution
- of which **over 4,800 retained** for funding
- **Over 11,000 evaluators** contracted
- **More than 4,300 grant agreements** signed with **€ 7.4 billion EU contribution**
- **8 months time-to-grant met in 93% of cases**, excluding ERC grants, which are not bound by this target
- **Average success rate around 14%**

Content of Work Programme (2016-17)

- Total budget over €16 bn. over two years.
- 63 calls for proposals and 588 topics
- Developed after extensive consultation process with experts, stakeholder communities and Member States
- Covers all areas of Research and Innovation and the full innovation cycle

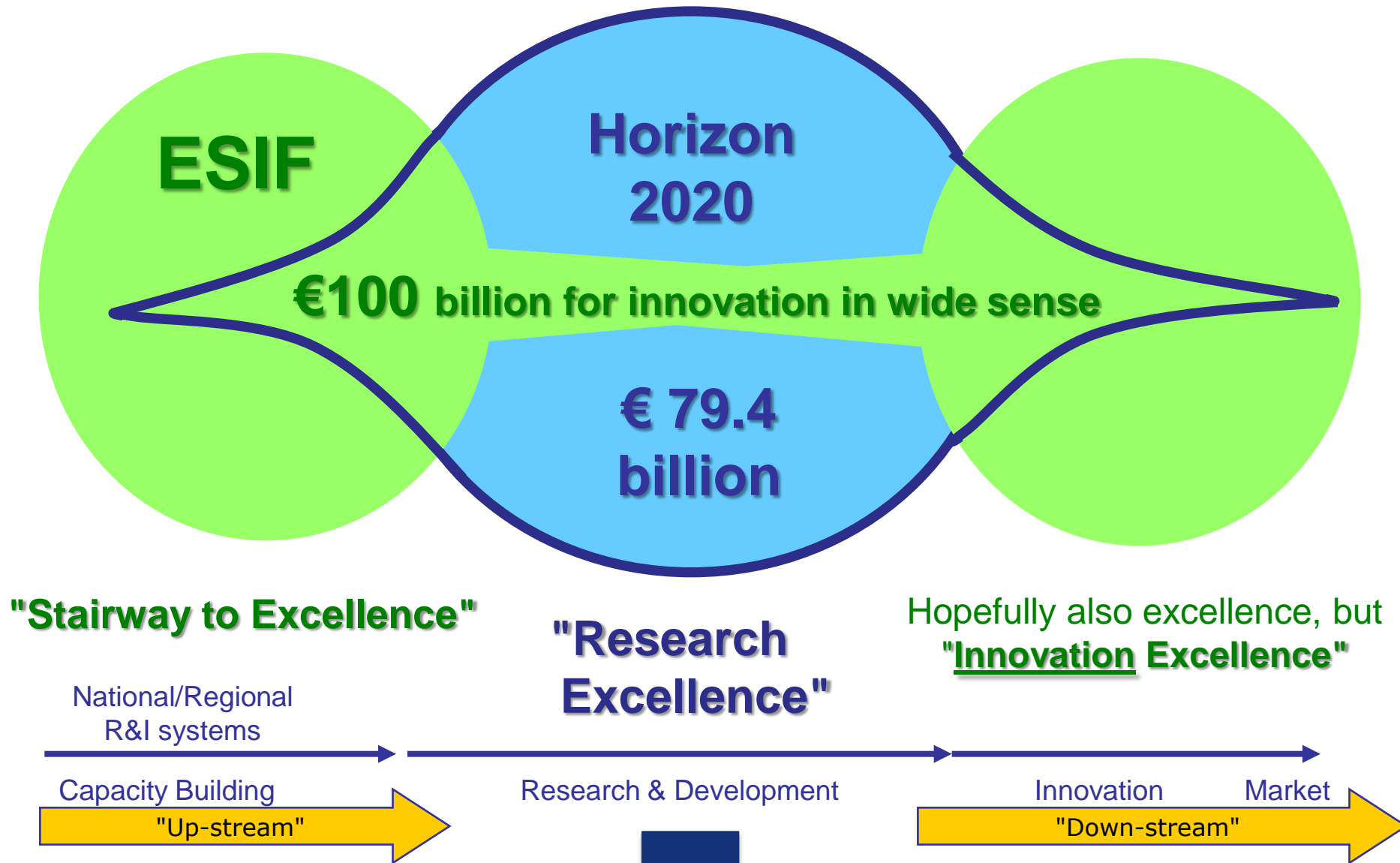
Work Programme highlights

- Strong alignment with Commission's 10 new policy areas,
 - **notably contribution to Jobs, Growth and Investment Package to strengthen Europe's global competitiveness, create new and sustainable jobs and promote growth**
- Strongly cross-cutting calls e.g.
 - **Internet of Things;**
 - **Smart and Sustainable Cities;**
 - **Industry 2020 in the Circular Economy;**

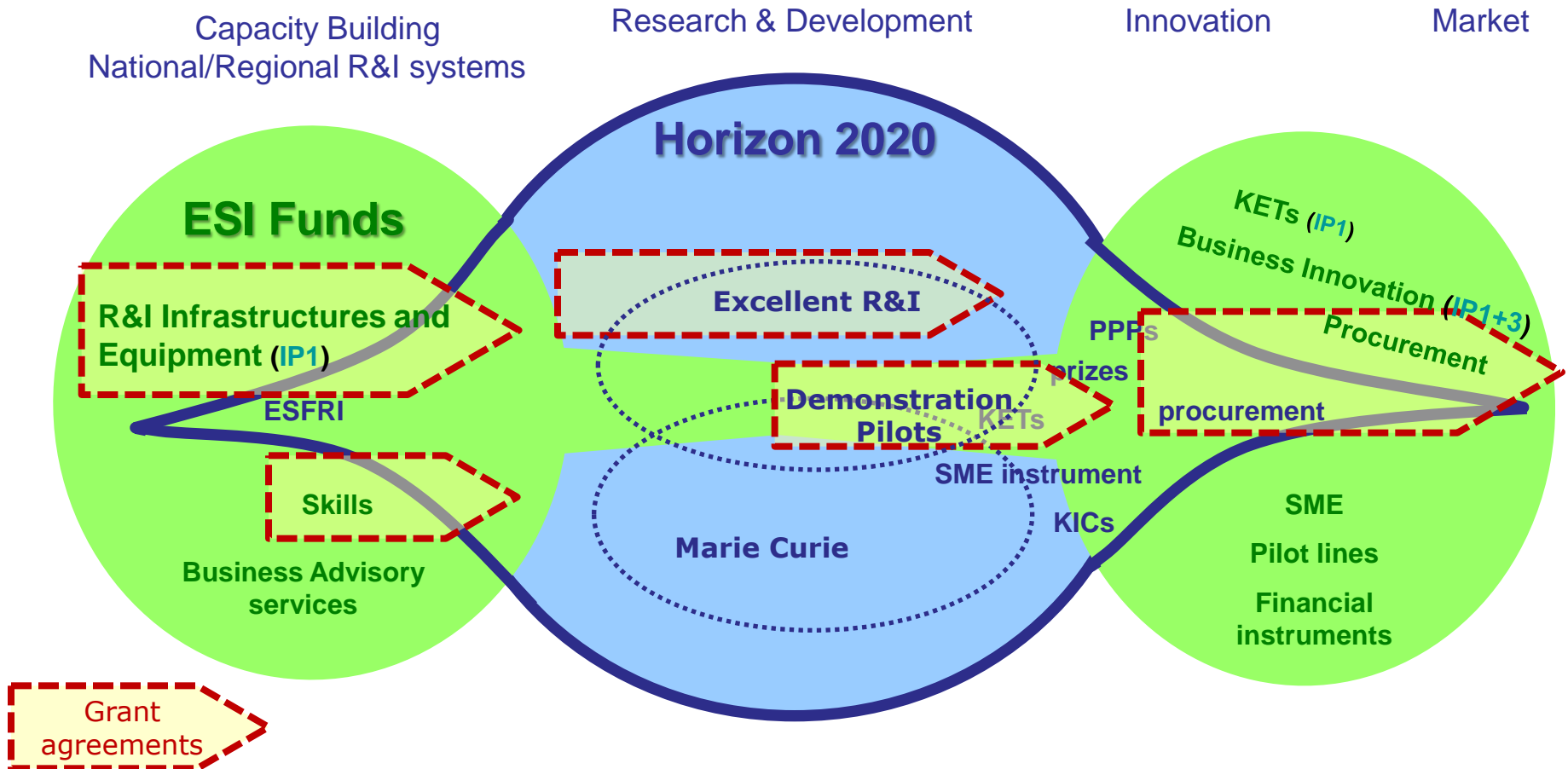
THE SYNERGIES BETWEEN ESIF AND HORIZON2020



Overall concept for complementarity: Emphasis of programmes



Combining "normal" H2020 projects & ESIF ... through sequential or parallel projects



R&I IN THE CIRCULAR ECONOMY PACKAGE AND THE CIRCULAR ECONOMY IN HORIZON 2020

Horizon 2020

Industry 2020 in the Circular Economy

- **CIRC-01-2016-2017:** Systemic, eco-innovative approaches for the circular economy: large-scale demonstration projects
- **CIRC-02-2016-2017:** Water in the context of the circular economy

CIRC-01 Systemic, eco-innovative approaches for the circular economy: large-scale demonstration projects

Specific Challenge (2016-2017)

- **increasing resources constraints**
- **replacing** current **linear** models with **circular models** of **production and consumption** to increase **resource efficiency**
- adopting a **systemic** approach to **eco-innovation** encompassing the **whole value and supply chains** and engaging **all actors involved** in such chains
- foresighting the **diverse impacts** of transformative innovative solutions

CIRC-01-2017

b) Systemic services for the circular economy

Scope (2017)

- **Demonstrating** the feasibility of circular economy business models that underpin new services based on:
 - **performance/functionality** rather than ownership
 - And/or **mass customisation**
- **All forms of innovation** to be addressed
- Proposals should consider ways supporting **co-creation** by developing new business models with end-users
- Support to end-users by **awareness raising** and **knowledge sharing** activities on circular economy models

CIRC-01-2017 b) Systemic services for the circular economy

Expected Impact (2017)

To make measurable impact in the **medium term** to:

- **creating markets** for new products/services (e.g. leasing or sharing practices)
- reducing supply chain length
- facilitating the **inclusion of resource or materials criteria** in designing products/services (e.g. durability, reparability or recyclability)
- the creation of **business opportunities, exploiting EU eco-innovative solutions**, and demonstrating their economic, social, and environmental **sustainability**

CIRC-01-2017

**Systemic, eco-innovative approaches
for the circular economy: large-scale
demonstration projects**

**b) Systemic services for the circular
economy**

Deadlines

Stage 1 07-03-2017 @ 17:00:00 (*Brussels*)

Stage 2 05-09-2017 @ 17:00:00 (*Brussels*)

Type of action: Innovation actions

Indicative budget: 40 M€

IA
70%

CIRC-02 Water in the context of the circular economy

Specific Challenge (2016 – 2017)

- **Water** is becoming an **increasingly scarce resource** due to competition among various uses
- Need for improving water systems by considering the **whole water-use production chain** and by solutions that enhance **economic as well as environmental performance** of the system.

CIRC-02-2017

b) Towards the next generation of water systems and services – large scale demonstration projects

Scope (2017)

- To **demonstrate** innovative solutions at a **large scale** (regions, cities, river basins)
- Focus on developing **water services of the future**, going beyond water supply sustainability addressing the different water value chains
- Should build on experience gained in areas where **integration of various aspects of water management** and other economic and social activities is already taking place
- Participation of **industry partners** from relevant sectors essential

CIRC-02-2017

b) Towards the next generation of water systems and services – large scale demonstration projects

Scope (2017), cont.

- Relevant **socio-economic issues** (regulatory, governance, social behaviour and acceptability) to be addressed, with participation of social sciences and humanities disciplines
- **Digital technologies** and **ICT tools** should be considered

CIRC-02-2017

b) Towards the next generation of water systems and services – large scale demonstration projects

Expected impact

- Significant **reduction of** current water & energy **consumption**
- **Interconnectivity** between water system and other economic & social sectors
- Increased public involvement in water management
- Closing of the infrastructure and investment gap in the water service sector
- Creation of **new markets**

CIRC-02-2017

Water in the context of the circular economy

b) Towards the next generation of water systems and services – large scale demonstration projects

Deadlines

Stage 1 07-03-2017 @ 17:00:00 (Brussels)

Stage 2 05-09-2017 @ 17:00:00 (Brussels)

Type of action: Innovation actions

Indicative budget: 10 M€

IA
70%

INNOVATION DEALS: A NEW APPROACH TO REGULATION

Innovation Deals

What?

- A new way to address **EU legislative obstacles to innovation** in an open and transparent manner, in the form of a **voluntary cooperation** between innovators, national/regional/local authorities and Commission Services
- An **innovative better regulation instrument** for facilitating development of innovative solutions to better achieve EU policy objectives

Innovation Deals

Why?

To offer a **pragmatic, flexible and transparent approach** to address innovation obstacles

To trigger growth and jobs whilst fully **respecting EU law**, without derogating from the existing legislative framework



Innovation Deals

How?

Helping **innovators** and **national, regional or local authorities** to look at flexibility in the EU legislation or to implement specific legal provisions where appropriate by **providing in-depth analysis**

Facilitating national and local institutions to better **relating** in full transparency with **EU innovators**



Innovation Deals

Concrete outcomes

LEGISLATIVE BARRIERS

1. Lack of clarity in legislation
2. Inconsistencies in legislation or policy objectives
3. Lack or conflicting standards/norms/guidelines
4. EU legislation not fit for purpose (might feed REFIT)

IMPROVED CLARITY

OTHER BARRIERS

1. Improve communication channels
2. Improve awareness of specific elements (e.g. legal, technical, regional or local...)

ENHANCED COOPERATION



Thank you for your attention

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