



Smart Specialisation Strategies: Charting out European Structural and Investment Funds Investments in Research and Innovation

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Structure

- **Results** from 2007-2013 Structural Funds for research and innovation
- **Lessons learnt** from past Cohesion Policy for research infrastructure
- **Opportunities** for research infrastructures until 2020
- **Challenges** for research infrastructure investments in terms of performance & smart specialisation

Key Achievements of Cohesion Policy in 2007-13

Creating jobs and growth & Investing in people

- ✓ Income has increased in the poorest EU regions with **GDP** per capita growing in these areas from 60.5% of the EU average in 2007 to 62.7% in 2010.
- ✓ About **940 000 new jobs** were created
- ✓ **2.4 million** participants in ESF actions supporting access to employment **found a job within 6 months** (2007-2010).

Strengthening research and innovation

- ✓ **114 000 research projects**
- ✓ **35 500 R&I co-operation projects**
- ✓ **41 600 new long-term research jobs** created.

Supporting SMEs and start-ups

- ✓ **254 800 SMEs** received direct investment aid.
- ✓ More than **323 000 jobs** were created in SMEs.
- ✓ **121 400 start-ups** supported

8.2 million more EU citizens were covered by **broadband connectivity**

Improving the environment

- ✓ **Water supply** systems have been modernised, benefiting **5.9 million citizens**
- ✓ More than **6.8 million citizens** served by **waste water** projects
- ✓ **1 100 Km²** of Area rehabilitated

Modernising transport and energy production

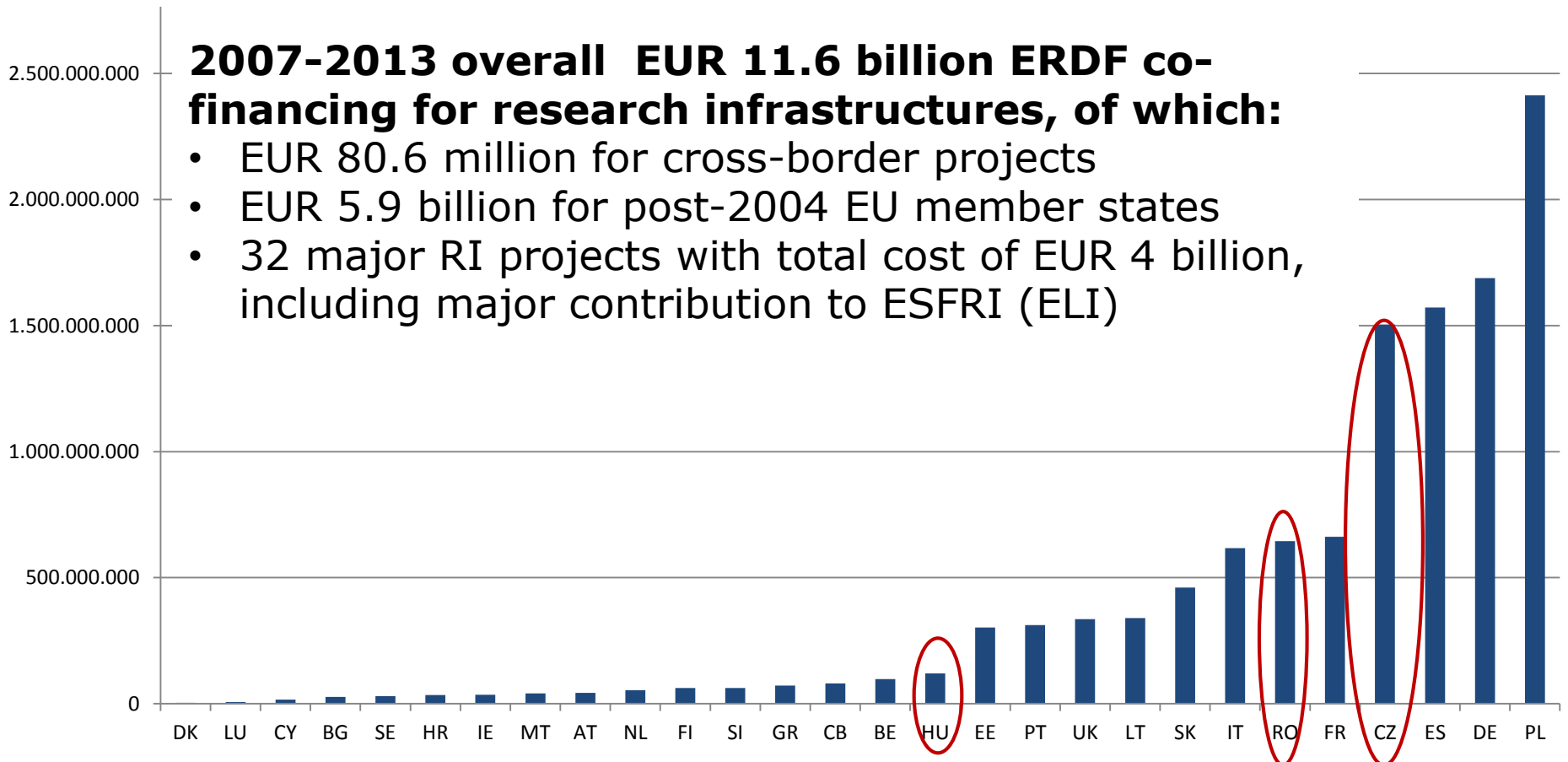
- ✓ **3855 MW additional capacity** of renewable energy production
- ✓ **4 680 Km roads** built and 24 900 Km reconstructed
- ✓ **287 Km railways** built & 3 940 Km reconstructed

Source: http://ec.europa.eu/regional_policy/en/policy/what/key-achievements/#4

ERDF funding for research infrastructures

2007-2013 overall EUR 11.6 billion ERDF co-financing for research infrastructures, of which:

- EUR 80.6 million for cross-border projects
- EUR 5.9 billion for post-2004 EU member states
- 32 major RI projects with total cost of EUR 4 billion, including major contribution to ESFRI (ELI)



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Lessons learnt – Research infrastructures

- Research excellence per se is no objective for Cohesion Policy, but just a tool for competitiveness and growth
- Big is not necessarily beautiful (over-capacities? top crust?)
- Research Infrastructures do not *per se* lead to regional socio-economic development: connected to innovation eco-system?
- Technology & knowledge transfer to firms in the region needed
- Business plans for research infrastructures remain wishful thinking, unless energetically implemented
- Academia-business cooperation requires time and efforts
- Links to regional economy need to be planned & fostered from the out-set, including alignment to specific R&I needs and potentials of the regional economy

Smart Specialisation is the key

What is Smart Specialisation?

Research & Innovation Strategy for Smart Specialisation (RIS³)=
**Integrated, knowledge-driven economic
transformation agenda tailored to the local
context**

Different pathways for innovation and development, including:

- a) rejuvenating** traditional sectors through higher value-added activities and new market niches;
- b) modernising** by adopting and disseminating new technologies;
- c) diversifying** technologically from existing specialisations into related fields;
- d) developing new economic activities** through radical technological change and breakthrough innovations;
- e) exploiting new forms of innovation** such as open and user-led innovation, social innovation and service innovation.

See: <http://s3platform.jrc.ec.europa.eu/ris3-guide>



Design Principles for Smart Specialisation Strategies (RIS³)

- 1. ANALYSIS:** evidence of the socio-economic and innovation engines of regional growth, competitive advantages & weaknesses
- 2. STAKEHOLDER INVOLVEMENT:** inclusive, interactive and on-going process of *entrepreneurial discovery* to sound out potential for critical mass for joint efforts towards economic transformation
- 3. MAKE CHOICES:** identify a limited set of priorities for development where to concentrate investment: focus on new knowledge for existing industries, diversification, emerging industries, 'embeddedness' and 'relatedness', on boundary-spanning and cross-clustering, creating new value chains, transformation of local economies
- 4. BROAD VIEW OF INNOVATION:** support technological as well as practice-based and social innovation, demand side innovation tools etc.
- 5. MONITORING AND EVALUATION:** feeding back information into the policy cycle and allowing strategy adjustment to sharpen priorities



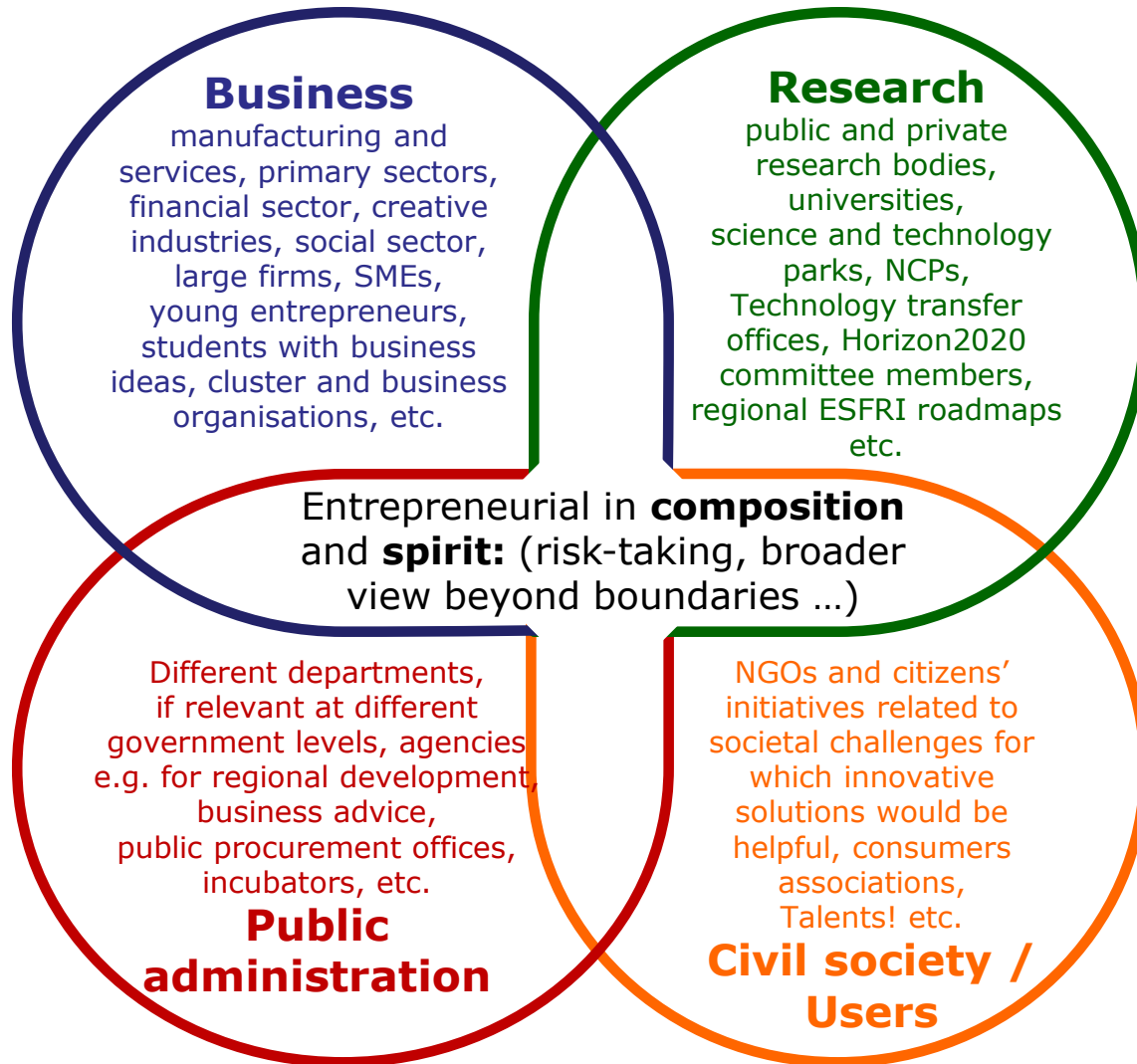
RIS3 Guide

http://ec.europa.eu/regional_policy/sources/docgener/guides/synergy/synergies_en.pdf



Video: The Kingdom of Smart

http://ec.europa.eu/regional_policy/videos/index.cfm?LAN=EN



RIS³ design: Entrepreneurial Discovery Process

- **Reiterative process**
- **Creative thinking / combination**
- **External view needed**

See Common Provisions Regulation for all ESI Funds, No. 1303/2013) annex 1, point 4.3.2.

See also annex III of RIS3 Guide:
<http://s3platform.jrc.ec.europa.eu/s3pguide>

RIS³ = Ex ante conditionality for ERDF

Investment priority 1.a:

*"1. strengthening research, technological development and innovation through
(a) enhancing **research and innovation (R&I) infrastructure and capacities** to develop R&I excellence and promoting **centres of competence**,
in particular those of **European interest**"*

1. Smart specialisation strategy: Research & innovation infrastructure projects have to fit into RIS³, i.e. be part of the place-based economic transformation agenda of the host region / MS

Over 50
RIS³s still
need some
work

2. Multi-annual plan for Research and Innovation

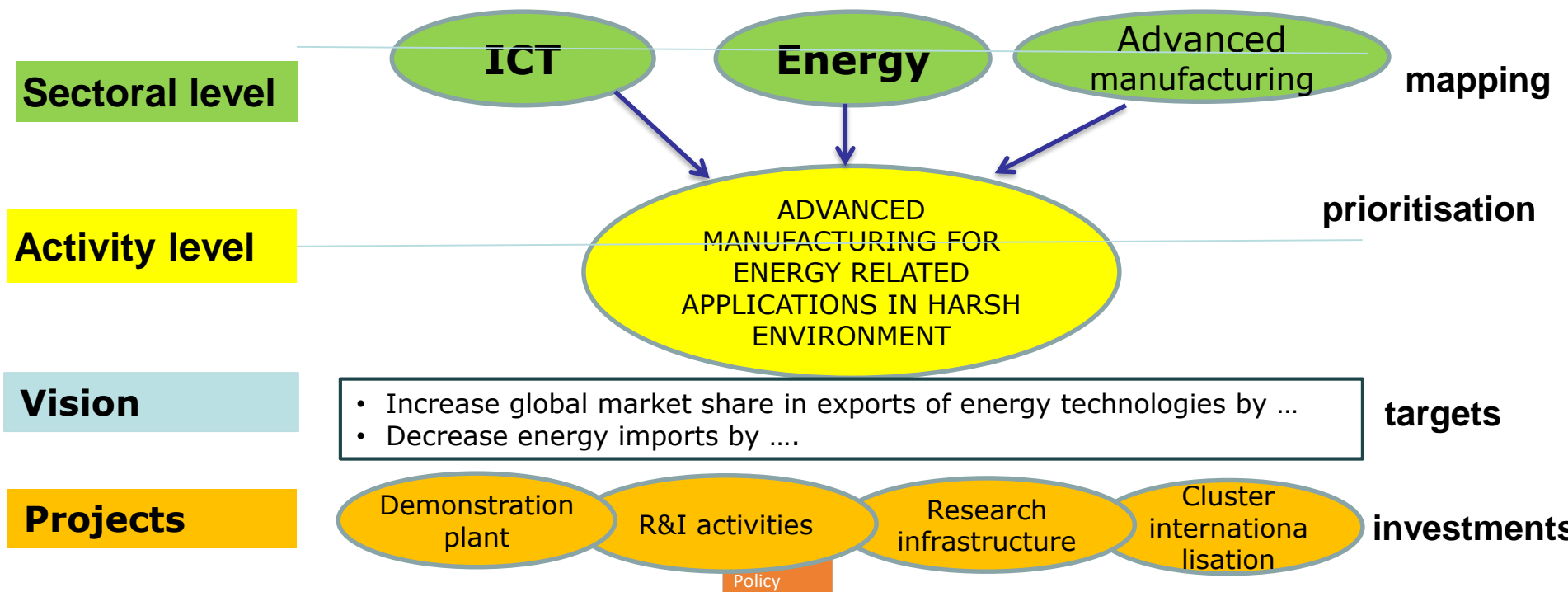
Infrastructure: projects have to fit into an indicative multi-annual plan for budgeting and prioritization of investments linked to EU priorities, and, where appropriate, the European Strategy Forum on Research Infrastructures (ESFRI)

Around 20
RI-plans
still need
some work

The notion of "smart specialisation priority"

It is about **developing new specialities based on regional concentration of knowledge, competence and market potential (dynamic, forward looking)**

Not understood as a sector or specialised relative to other regions (passive / static / back-wards-looking)



Research Infrastructures as part of

RIS³: How an ideal situation should look like:

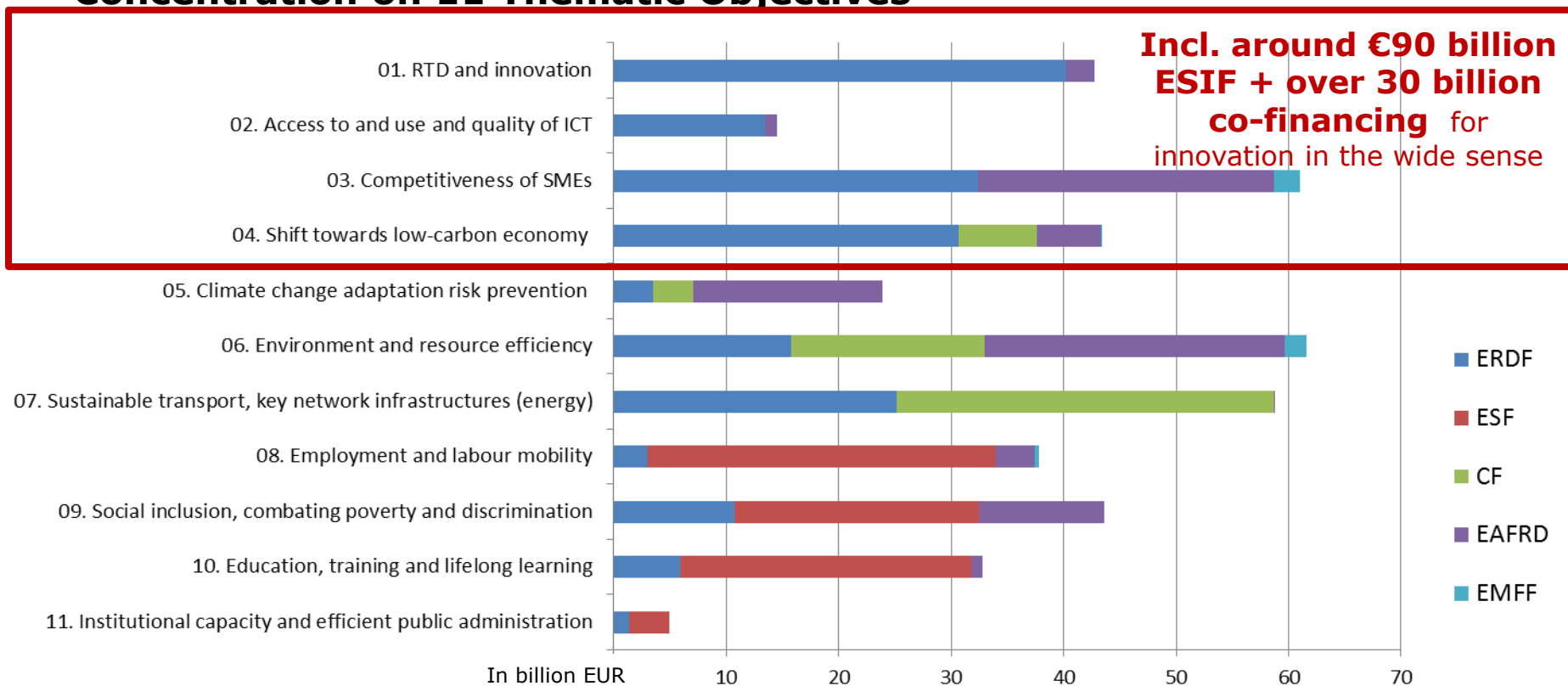
- ✓ RIs as integral part of implementation roadmaps strategies, not "cathedrals in the desert" & large-scale budget absorbers
- ✓ RIs identified in an entrepreneurial discovery process, jointly by academia, researchers and enterprises
- ✓ RIs aim to become crystallisation points for economic change and growth: cooperation/ integration with clusters, technology parks, incubators, SME support, LivingLabs, demonstrators, etc.
- ✓ Importance of RIs for international attractiveness & connectedness: including for private investors & brain-gain ...
- ✓ RIS³ monitoring includes evaluation of RIs and their role in RIS³: relevant also for RIS³ adjustments

Structure

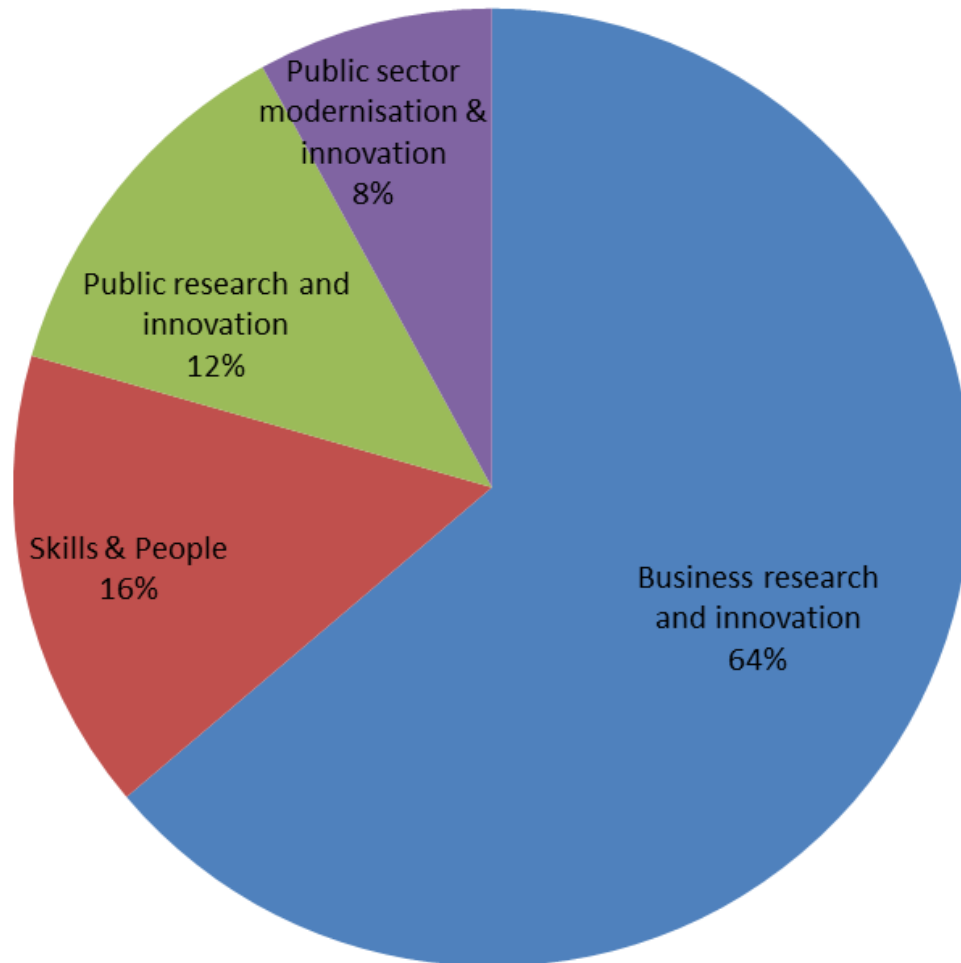
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ESIF programming 2014-20: State of Play

- **EUR 451 billion of ESIF + EUR 183 billion of national co-financing**
- **456 national and regional and 79 INTERREG cooperation programmes**
- **Concentration on 11 Thematic Objectives**



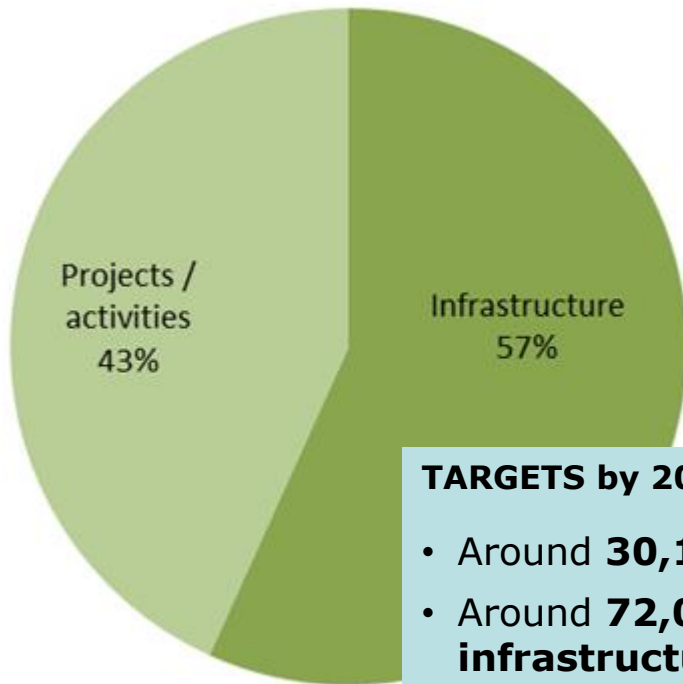
ESIF Innovation Investments 2014-2020



ERDF & ESF allocations:

- Business research & innovation:
EUR 60 billion
- Skills & People:
EUR 14.5 billion
- Public research & innovation:
EUR 11.7 billion
- Public sector modernisation & innovation:
EUR 7.4 billion

... of the public research & innovation investments:



ERDF allocations:

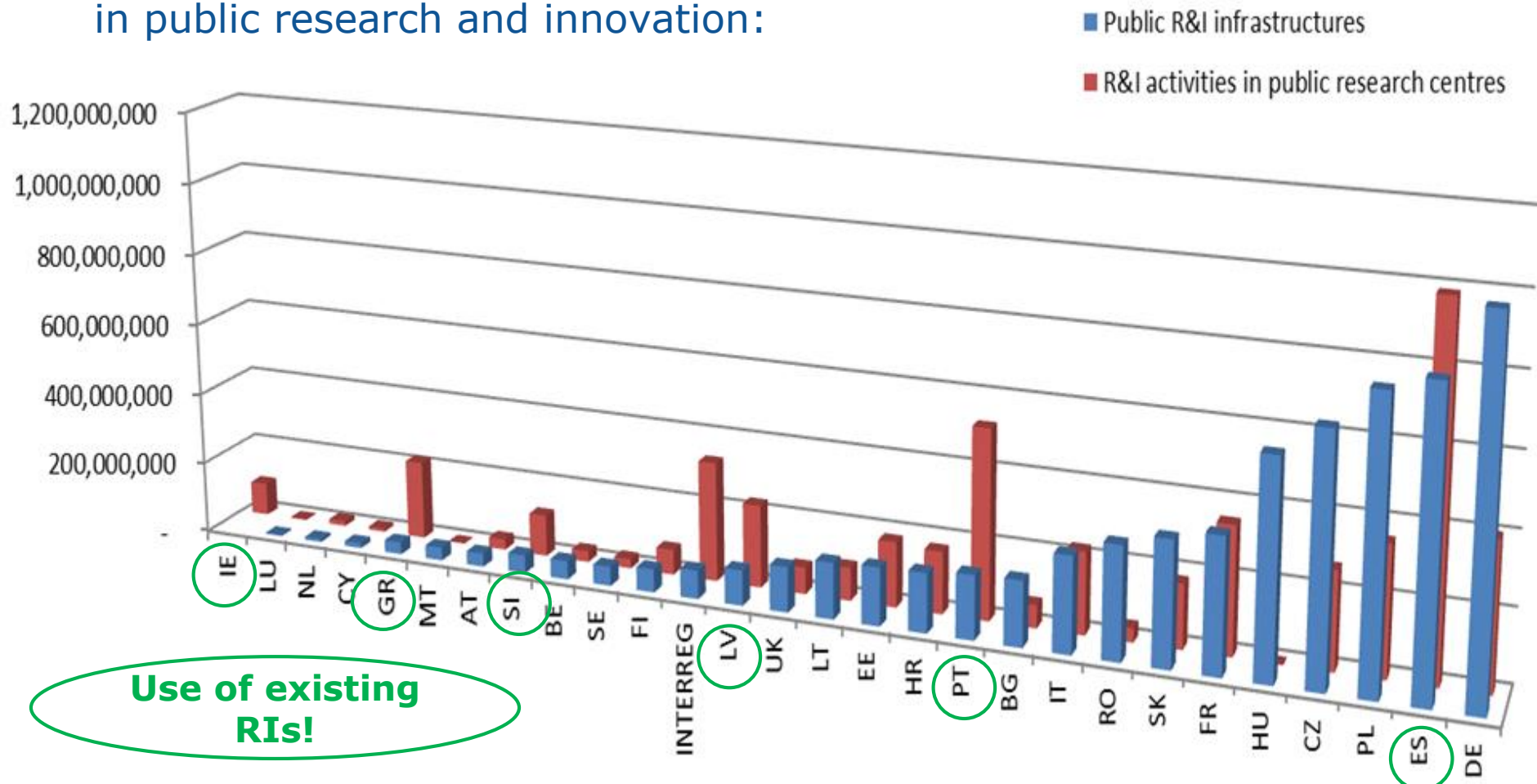
- Public research & innovation activities:
EUR 5.1 billion
- Public R&I infrastructures:
EUR 6.6 billion

TARGETS by 2023:

- Around **30,100** new researchers in supported entities
- Around **72,000** researchers working in improved research infrastructure facilities
- Around **72,000** enterprises cooperating with research institutions
- Around **1,200** research institutions participating in cross-border, transnational or interregional research projects - Interreg

ESIF investment plans in RIs:

Country break-down of ERDF investments until 2020
in public research and innovation:



List is indicative & incomplete as majority ERDF projects is not "major"

ESIF investment plans in RIs:

Estimated EUR 1.1 billion for **major R&D infrastructure** and centres of competence in a specific technology (= over EUR 50 million):

Ceska Republika	<ul style="list-style-type: none"> • Biotechnologické a biomedicínské centrum Akademie věd a Univerzity Karlovy • Fakultní nemocnice u sv. Anny v Brně - Mezinárodní centrum klinického výzkumu (FNUSA - ICRC)
Deutschland (Saxony)	<ul style="list-style-type: none"> • Umbau und Sanierung Adolf-Ferdinand-Weinhold-Bau FKZ 2009153
France	<ul style="list-style-type: none"> • Terra botanica (Pays de la Loire) • Campus universitaire de Guyane • Construction du nouveau bâtiment de l'Institut Jean Lamour à Nancy
Hrvatska	<ul style="list-style-type: none"> • Biosciences Technology Commercialisation and Incubation Centre - Biocentre
Lietuva	<ul style="list-style-type: none"> • Establishment of National Centre of Physical and Technological Sciences
Magyarország	<ul style="list-style-type: none"> • ELI lézer kutatóközpont megvalósítása (ELI-ALPS) nagyprojekt, 1. fázis
Polska	<ul style="list-style-type: none"> • Centrum Zaawansowanych Materiałów i Technologii • Centrum Badań Przedklinicznych i Technologii (CePT) • Dolnośląskie Centrum Materiałów i Biomateriałów Wrocławskie Centrum Badań (EIT+) • Budowa i wyposażenie Wielkopolskiego Centrum Zaawansowanych Technologii w Poznaniu • Centrum Nowych Technologii „Ochota” Uniwersytetu Warszawskiego • Budowa Budynków Wydziałów Chemii i Biologii Uniwersytetu Gdańskiego • Centrum Czystych Technologii Węglowych • Centrum Nauk Biologiczno-Chemicznych UW - Kampus Ochota (CENT III)
România	<ul style="list-style-type: none"> • Extreme Light Infrastructure-Nuclear Physics
United Kingdom	<ul style="list-style-type: none"> • Science City York • Technology Innovation Centre (TIC), Strathclyde • National Graphene Institute

ESIF investment plans in ESFRIs:



European Spallation Source

Multi-disciplinary Research Infrastructure based on the world's next-generation neutron source co-hosted by Lund (SE) & Copenhagen (DK)

- ✓ **€20 million will be allocated by the national ERDF programme of Sweden.**



Extreme Light Infrastructure

Some of the most intense lasers world-wide, to develop new interdisciplinary research opportunities with light from these lasers and secondary radiation derived from them. ELI is currently based on three sites: Dolní Břežany (CZ), Szeged (HU) and Măgurele (RO).

Over EUR 375 billion will be allocated from the Operational Programmes of the current programming period:

- ✓ **RO: EUR 116.3 million – infrastructure**
- ✓ **HU: EUR 83.2 million – infrastructure**
- ✓ **CZ: EUR 176.4 million - activities**

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Challenges:

- 1. Get from programmes & strategies to viable, mature investment projects ...*
- 2. Align RIs' business & financing plans to state aid rules ...*
- 3. Make RIs work for smart specialisation & economic transformation*

1. From programme & strategy to viable, mature investment projects

Support for project development:

- **Horizon 2020** research infrastructures support: scientific & technological feasibility
- **ERDF - JASPERS** & technical assistance: cost-benefit analysis & business plan for running & financing RIs
- **European Investment Advisory Hub** of the EFSI (EIB): bankability of projects

Synergies & Gaps?

Special Rules & Support for Major Projects

- **Scrutiny of major projects** (\geq € 50 million of eligible cost) as regards **cost-benefit**, environmental impact and state aid conformity before the implementation – applies also to research infrastructure projects!
- **JASPERS** (Joint Assistance to Support Projects in European Regions) support available for all MS: independent expert advice and capacity building support to public authorities and final beneficiaries on how to plan, develop and implement **high quality major projects to be co-financed by ERDF**.
<http://www.jaspers-europa-info.org>



JASPERS also provides training and guidance (<http://www.jaspersnetwork.org>):

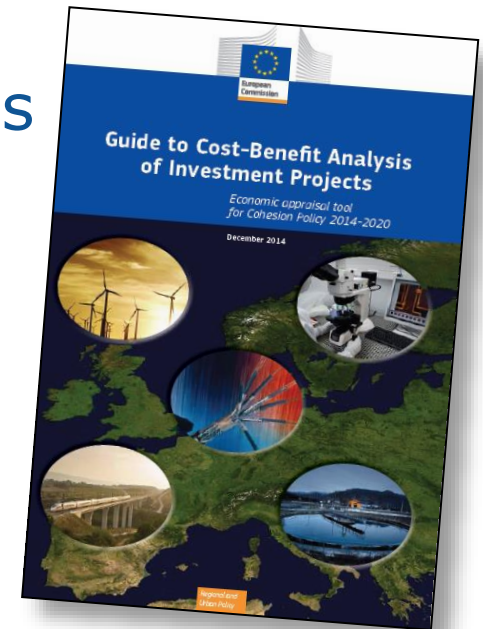
- Implementation of R&D Projects – Recruitment Plan & Staff Development Plan
- Project Preparation and CBA of RDI Infrastructure projects (2013)
- State aid research infrastructure projects (2012)
- ...

REGIO Guidance for project promoters

Guide to Cost-Benefit Analysis for projects submitted to ESIF 2014-2020, incl. chapter on research infrastructures

How to assess options against:

- Expected costs
- Expected revenues
- Expected economic benefits, incl. positive and negative externalities
- Possible wider regional effects
- Implementation time
- Degree of uncertainty and the risk involved



http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf

From adopted ERDF OP to implementation: Project selection & Cost-benefit Analysis

1. Operational Programme: sets out programme-based selection approach regarding benefits and impact
2. Cost-benefit Analysis (mandatory for major projects): project-based approach

Aspect	CBA	OP
Time horizon (years)	30	7 (10)
Benefits	All benefits for the society	specific benefits for the OP e.g.: <ul style="list-style-type: none"> - No. of patents; - Value of research undertaken; - R+D employment
Nature of impact	Variable in terms of time and causality	Tangible impact on growth and jobs expected (also in territorial terms)
Rationale	Is the project worth supporting by the society?	In addition, is the project better than other proposals in the programme?

2. State aid rules apply to ERDF

- **Avoiding "economic activities" is a non-option for ERDF research infrastructure projects:**
 - ✓ **But: up to 20%** of activities and capacity can be allocated each year to economic activity without being state aid relevant
- **Investment aid** for research infrastructures (Art.26 GBER):
 - ✓ **Up to EUR 20 million and up to 50% aid intensity:** no need to notify the project to DG COMP
- **Regional aid** for RIs (Art.14 GBER): :
 - ✓ **Condition:** RI has to give transparent and non-discriminatory access to the infrastructure
 - ✓ **Aid intensity up to 70%** - depending on aid classification in the Regional Aid maps
- **For the rest: Notification!**

3. Make RIs work for RIS³ & economic transformation: What MS & regions could do

1. **Prioritise strategic and transformative projects** in their RIS³/OP implementation ("*selection criteria*"), e.g. along roadmaps in specific value chains related to RIS³ priority areas with impact on innovation eco-systems
2. **Overcome fragmentation & duplication for building critical mass:**
 - **More "joint programming"** with other MS and investors and common implementation roadmaps via cooperation along shared value-chains.
 - **Map the complementarities** in their planned thematic RIS³/ESIF investments to enable synergies and more targeted support in RIS³ priority areas

Questions and Answers



For more information:

Cohesion Policy:

http://ec.europa.eu/regional_policy/index_en.cfm

Research & innovation in Cohesion Policy:

http://ec.europa.eu/regional_policy/en/policy/themes/research-innovation/

Smart Specialisation Strategies

<http://s3platform.jrc.ec.europa.eu>

Thematic guides

Relevant for design of policy mix and implementation tools

Available in PDF format here:

<http://s3platform.jrc.ec.europa.eu/guides>

- ☐ RIS3 guide
- ☐ Universities & regional development
- ☐ Service innovation
- ☐ Creative industries
- ☐ Social innovation
- ☐ How to convert research into commercial success
- ☐ Science and Technology Parks
- ☐ Public procurement of innovation
- ☐ Synergies between ESIF, Horizon2020 and other EU programmes
- ☐ SME innovation
- ☐ Incubators
- ☐ Connecting Smart and Sustainable Growth through Smart Specialisation
- ☐ Guide to Multi-Benefit Cohesion Policy Investments in Nature and Green Infrastructure
- ☐ Driving energy efficient innovation through procurement
- ☐ Entrepreneurial mind-set
- ☐ SME internationalisation
- ☐ Digital growth

