



**Brussels, 11 September 2024
(OR. en)**

13292/24

**RECH 396
INTER-REP 89**

COVER NOTE

Subject: Why Europe needs a systematic R&I policy - Redefining
 competitiveness for long-term sustainability
 - Powerpoint presentation (Research WP meeting 11.09.2024)

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Why Europe needs a systemic R&I policy

*Redefining competitiveness for long-term
sustainability*

Report of the Expert Group on the Economic and
Societal Impact of Innovation (ESIR)

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ESIR

Why Europe
needs a systemic
R&I policy
*Redefining
competitiveness for
long-term sustainability*



ESIR: an expert group to support transformative research and innovation policy



Rationale

Starting from:

- Changes in the geopolitical landscape
- Resource scarcity of the EU
- The recognition to go beyond GDP as an indicator for well-being

we propose to define a competitive EU economy as a forerunner in maximizing the societal value gained by using the Earth's limited natural resources while at the same time minimizing the environmental and social costs.

This requires:

- A systemic approach: policies targeting competitiveness, research & innovation, climate, welfare and economic security become increasingly intertwined, asking for a systemic perspective to competitiveness.
- Sustainable growth and an equitable distribution of the costs and benefits from the use of natural resources to ensure long-term well-being and social cohesion.

Structure of the report

- Three perspectives on R&I policy that co-evolved with the challenge we face:
 - The traditional economic perspective: increasing productivity
 - The socio-technical perspective: first mover and lead market for sustainable socio-technical systems
 - The systemic perspective: competitiveness in light of the pressing global challenges and geopolitical tensions
- Illustration in two cases:
 - Circular economy
 - Green Hydrogen economy

The traditional economic perspective: increasing productivity

- Still core to competitiveness debate
 - **Transatlantic productivity gap** (investment, structure of the economy, from R&D to productivity gains)
 - **Additional concerns:** AI, digital transformation, shortages in skilled labour, access to capital, market integration, governance and regulation to guard European values)
 - **Composite indicators** (scoreboard) also indicate EU needs to accelerate
- Systemic policy is needed, but also direction (selection)
 - A systemic policy approach spans multiple policy domains

The socio-technical perspective: first mover & lead market for sustainable socio-technical systems

- EU scores well on R&I in some domains but not in others
- But....the conditions for establishing lead markets and first-mover advantages go far beyond technological performance.
- And requires continued investment and policy support

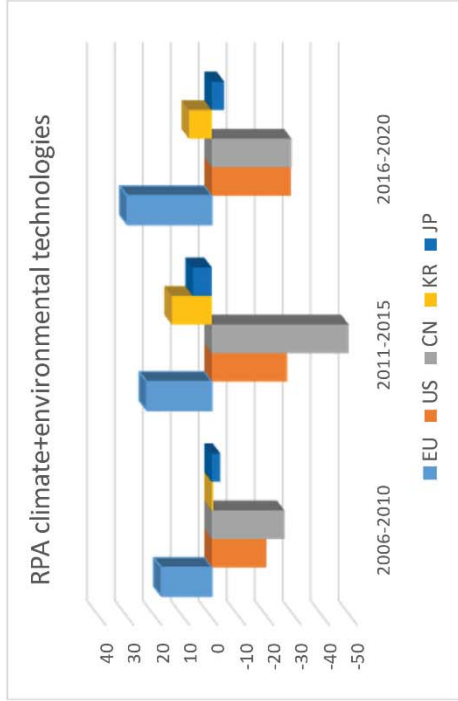


FIGURE 1 - DEVELOPMENT OF RPA OF EU 27 AND SELECTED COUNTRIES IN CLIMATE AND ENVIRONMENTAL TECHNOLOGIES. SOURCE: CALCULATIONS FROM FRAUNHOFER ISI, BASED ON PATSTAT DATA

Building blocks for a systemic approach

- Adopt resource and material productivity as key targets for R&I policy.
 - Systemic approach
 - Globally just: any comparative advantage for the EU needs to be embedded in trade relations that also allow EU trade partners to further develop towards their sustainable development goals.
- Social attractiveness
 - Attract skilled labour
 - Increase social cohesion
- In a systemic approach, these building blocks are embedded in and fully aligned in a horizontal policy mix to ensure that R&I is translated to competitive advantage and increased well-being and sustainability.

What does this mean for R&I policy: Exploration versus exploitation

- Direction: Choose areas where EU performs well in R&D (exploitation)
- Long-term: dynamic competitiveness (exploration)

Green hydrogen

- Strong knowledge base
- Market needs to be developed
- Vision on role of hydrogen in the economy (large policy/regulatory uncertainty)
- Strong pull from US

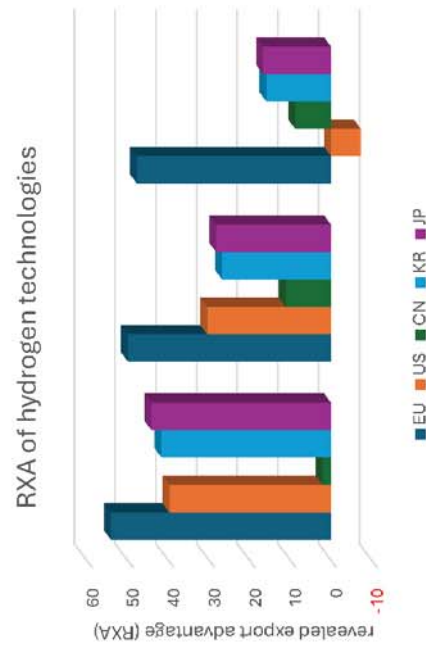


FIGURE 4 - RXA FOR HYDROGEN TECHNOLOGIES

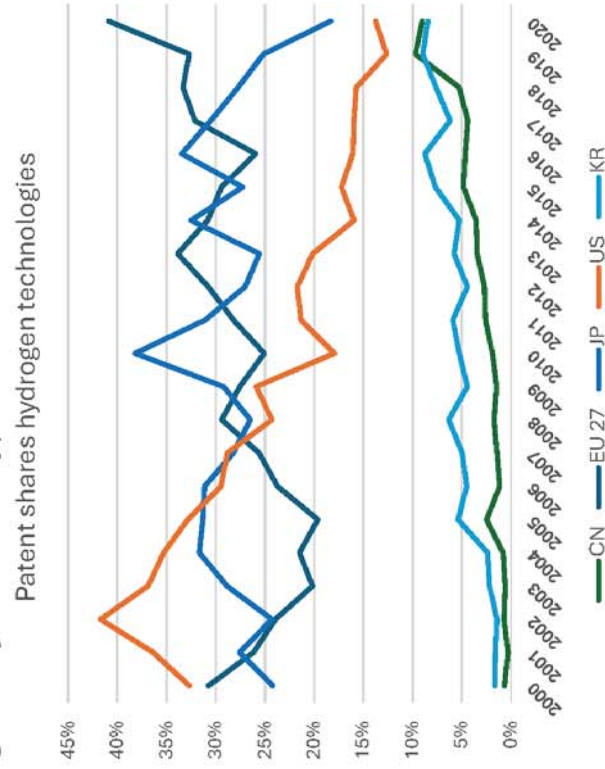


FIGURE 2 - HYDROGEN PATENT SHARES

Circular economy

- Large market potential
- Strong knowledge base
- Contributes to strategic autonomy
- Needed: development of markets and regulation

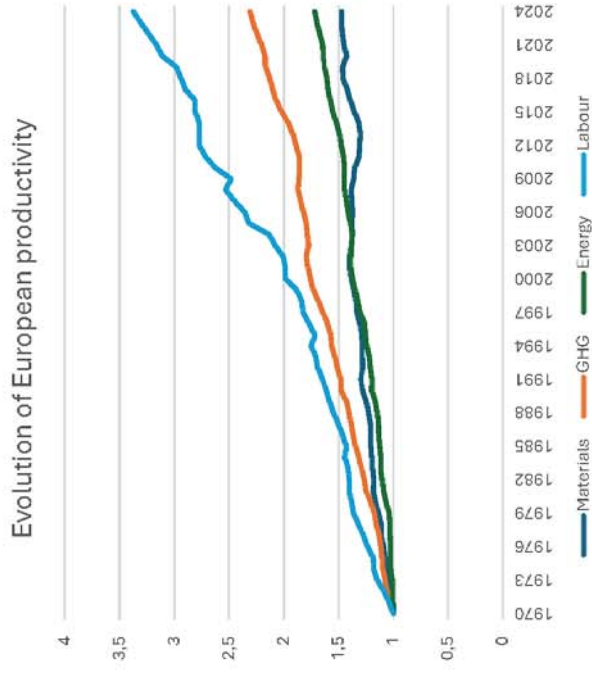
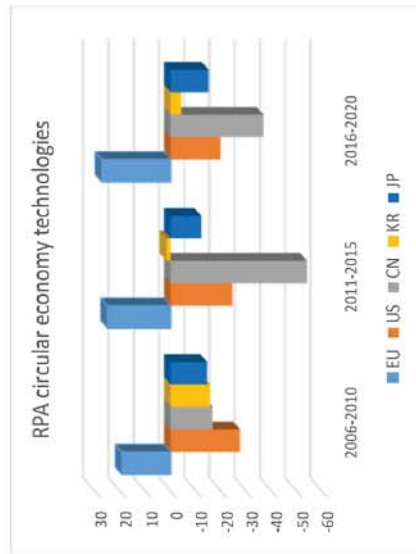


FIGURE 6 - EVOLUTION OF EUROPEAN PRODUCTIVITY. SOURCE: UN ENVIRONMENT PROGRAMME (2024) 'GLOBAL RESOURCES OUTLOOK 2024'

Summary

- A systemic R&I policy then starts from those areas where the EU has a comparative advantage *and* that aligns with well-being and sustainability goals.
- Green tech and innovations for circularity are such fields,
- where the relative resource scarcity of the EU can be a driver to create comparative advantage and ensure economic security.
- Developing EU competitive advantage in these areas
 - New regulation
 - Social and soft innovation
 - Redefining trade partnerships
 - Continued and consistent policy and investment support