



Council of the
European Union

**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

The graphic features 15 member portraits arranged in a diamond shape. The names are: Heather GRABBE, Jon SIMONSSON, Jean-François HUCHET, Pawel SWIEBODA, Marialuisa CASTANO MARIN, Bianca MUNTEAN, Epaminondas CHRISTOPOULOS, Katherine RICHARDSON, Pierre Alexandre BALLAND, Kirsten DUNLOP, Caroline PAUNOV, Dunja POTOČNIK, Rainer WALZ, Marzenna WERESA, and Andrea RENDA. To the right of the portraits, a list of policy areas is displayed in a curved, purple-to-blue gradient font: Skills, Youth, Gender, Energy, Equality, Education, Governance, Circular Economy, AI & Digitalization, Citizen Engagement, Innovation Ecosystems, Climate & Environment, Sustainable Development, and International Partnerships.

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

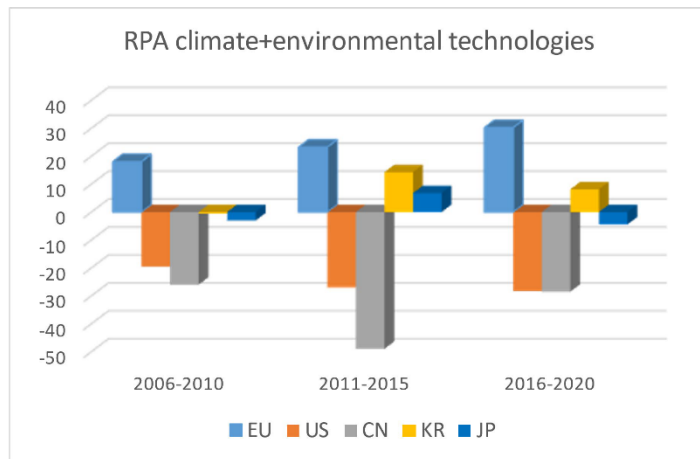


FIGURE 1 - DEVELOPMENT OF RPA OF EU 27 AND SELECTED COUNTRIES IN CLIMATE AND ENVIRONMENTAL TECHNOLOGIES. SOURCE: CALCULATIONS FROM FRAUNHOFER ISI, BASED ON PATSTAT DATA

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

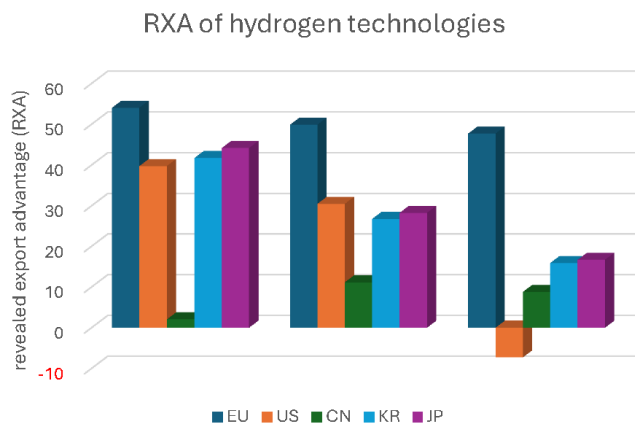


FIGURE 4 - RXA FOR HYDROGEN TECHNOLOGIES

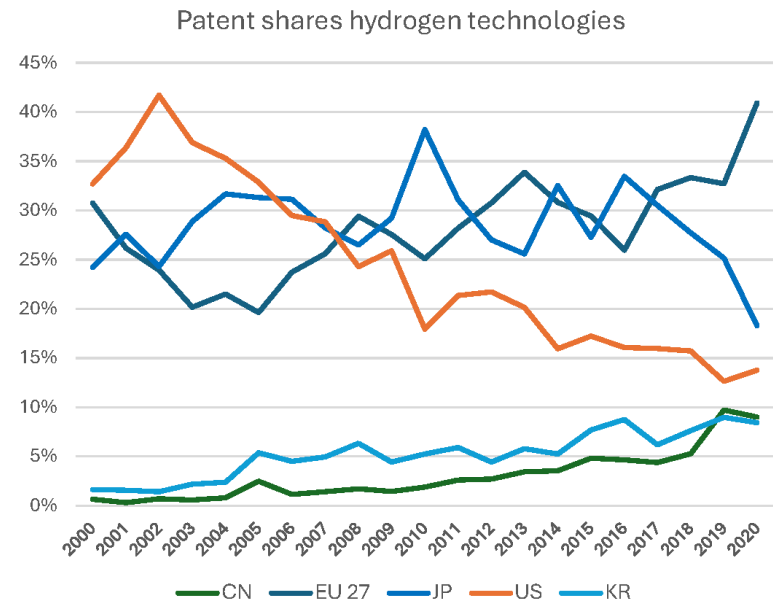


FIGURE 2 - HYDROGEN PATENT SHARES

Circular economy

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

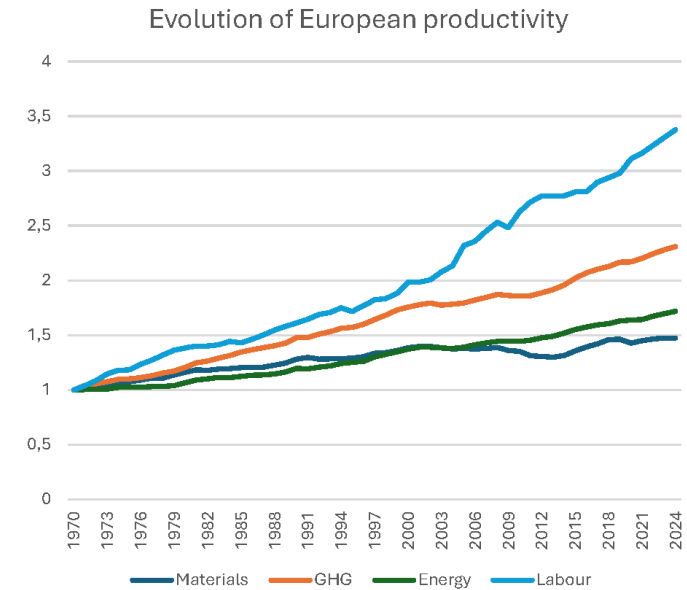
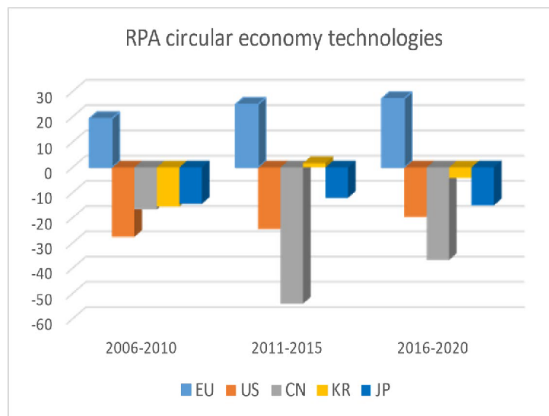


FIGURE 6 - EVOLUTION OF EUROPEAN PRODUCTIVITY. SOURCE: UN ENVIRONMENT PROGRAMME (2024) 'GLOBAL RESOURCES OUTLOOK 2024'

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
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