

The twin transition and ERAC's role in achieving it

1. Why should this topic be discussed in ERAC?

Ideally, there should be a mutually reinforcing relationship between the green and digital transitions. However, there are instances where these two transitions can be seen as opposites. For instance, the process of digitalisation heavily relies on electricity, and many digital technologies consume significant resources and generate waste.

To maximize the benefits of and to expedite both transitions, proactive and integrated management is crucial. While the private sector can be expected to have a leading role, due to the immense economic potential of the transitions, an effective utilization of the twin transitions for environmental sustainability and mitigation of its negative impacts will require active involvement from the EU, governments and civil society.

The concept of the *twin transition* is a key element within the European Green Deal¹, an ambitious policy framework introduced by the European Commission in 2019. It aims to transform the European Union (EU) into a climate-neutral and sustainable economy by 2050. The European Green deal refers to the parallel and interconnected processes of achieving climate neutrality and promoting economic growth. The twin transition recognizes that addressing climate change and achieving sustainability goals must go hand in hand with fostering economic development and creating new opportunities.

Research plays a crucial role in the European Green Deal by providing the necessary knowledge, technologies, and policy insights to drive the transition towards a sustainable and climate-neutral Europe.

A JRC Science for Policy report *Towards a green & digital future*² from June 2022 examines how the green and digital transitions can be successful and outlines key social, technological, environmental, economic and political requirements for the success of the European Union's twin transitions.

One requirement is to increase the societal commitment to the need to change in order to achieve the transitions. Making the twin transitions fair and inclusive can make their acceptance by the wider public easier. An example often given is that not everyone is in a position to buy expensive rooftop solar panels, but subsidies for them are often provided. Making such technology affordable to everyone is key to a just and effective transition. More data also means more privacy concerns. These must be addressed by anonymising data collection and data minimisation, gathering only as much data as strictly necessary.

Another set of requirements is technological. The needed infrastructure environment has to be put in place, beginning with high-speed broadband internet access for all. Interoperability between devices must be ensured, and benefits must be shared equally, with small and medium-sized enterprises included as much as large companies. When it comes to the environmental requirements, awareness-raising and higher environmental standards could keep unintended consequences to a minimum.

On the economic side, emerging markets must avoid the "innovation valley of death", where research gains systematically fail to materialise in applied form. Upskilling of the labour force is needed to fully exploit the potential of digital technologies. In order to do this effectively, education providers, especially in the higher education sector, will have to adapt their activities and curriculums to better meet the challenge of the twin transitions.

¹ [A European Green Deal \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/infographic_european-green-deal-2020-11-14.pdf)

² [JRC Publications Repository - Towards a green & digital future \(europa.eu\)](https://publications.jrc.ec.europa.eu/publication/?id=JRC115421)

Finally, politically, the EU should fully lean into its role as first-mover by establishing lasting green-digital standards. Policy coherence, as well as unlocking private investments are also crucial.

The report also concludes that while several studies on the twin transitions do exist, the policy implications in the long-term have so far not been thoroughly analysed.

Furthermore, the Commission's Strategic Foresight Report 2022³, which builds on the JRC's twin transition report, identifies 10 key areas of actions for a successful twinning of green and digital transitions. Among others, these key areas included strengthening resilience and open strategic autonomy in sectors critical for the twin transitions, strengthening economic and social cohesion and adapting education and training systems to match a rapidly transforming technological and socio-economic reality.

2. What guidance is needed from ERAC?

Research and innovation play a crucial role in facilitating and advancing the twin transition for several reasons. Research is crucial for generating new knowledge, driving innovation, supporting evidence-based decision-making, identifying economic opportunities, addressing societal challenges, and promoting collaboration in the twin transition. It serves as a foundation for informed policies, sustainable practices, and transformative actions necessary to achieve a low-carbon and sustainable future. However, research cannot only be seen as a tool for the twin transition. It will also be heavily impacted by it. There is a growing need to understand what the accelerating digitalisation of research will mean to research in itself and how it can be best used to speed up the twin transitions. The security perspectives must also be highlighted. As the next generation network solutions and quantum technology are developed, the safety of telecommunications will become an even bigger challenge to tackle.

While many publications and reports on the twin transitions exist, there is still a growing need for a joint vision on how to meet key requirements for it. ERAC's role in facilitating policy coordination among the Member States in the field of R&I and helping align national policies and initiatives makes it possible for it to play a significant role in achieving the twin transitions within the European Union. By leveraging its expertise and facilitating cooperation, ERAC can help ensure that research and innovation effectively support the goals of the European Green Deal and the twin transitions.

Possible questions for an ERAC policy discussion:

- *Do you agree with the analysis of requirements set out by the JRC's Policy report and the European Commission's Strategic Foresight Report?*
- *What kind of EU level actions could help to understand the future developments and their impact on achieving the twin transitions? (E.g. foresight scenario analysis as proposed by JRC?)*
- *What are the next steps ERAC should take in ensuring successful twin transitions at the European level? Should this process be more visible in the next ERA Policy Agenda?*

Expected results of the strategic discussion:

- Guidance for the next ERA Policy Agenda and a more advanced mutual understanding on the role of research and ERAC in achieving the twin transitions.

³ [Strategic Foresight Report - 2022 | European Commission \(europa.eu\)](https://ec.europa.eu/strategicforesight/)