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MEETING DOCUMENT

From:	General Secretariat of the Council
To:	ERAC (European Research Area and Innovation Committee)
Subject:	Analysis of the contribution of the Recovery and Resilience Plans to key EU policy priorities and a new EU R&I Policy landscape

On behalf of the Commission services, delegations will find attached the document ' *Analysis of the contribution of the Recovery and Resilience Plans to key EU policy priorities and a new EU R&I Policy landscape'*. At the end of the document, you will find the individual Country Fiches.

This document will provide input to the ERAC meeting of 14 February 2023.

Analysis of the contribution of the RRPs to key EU policy priorities and a new EU R&I Policy landscape

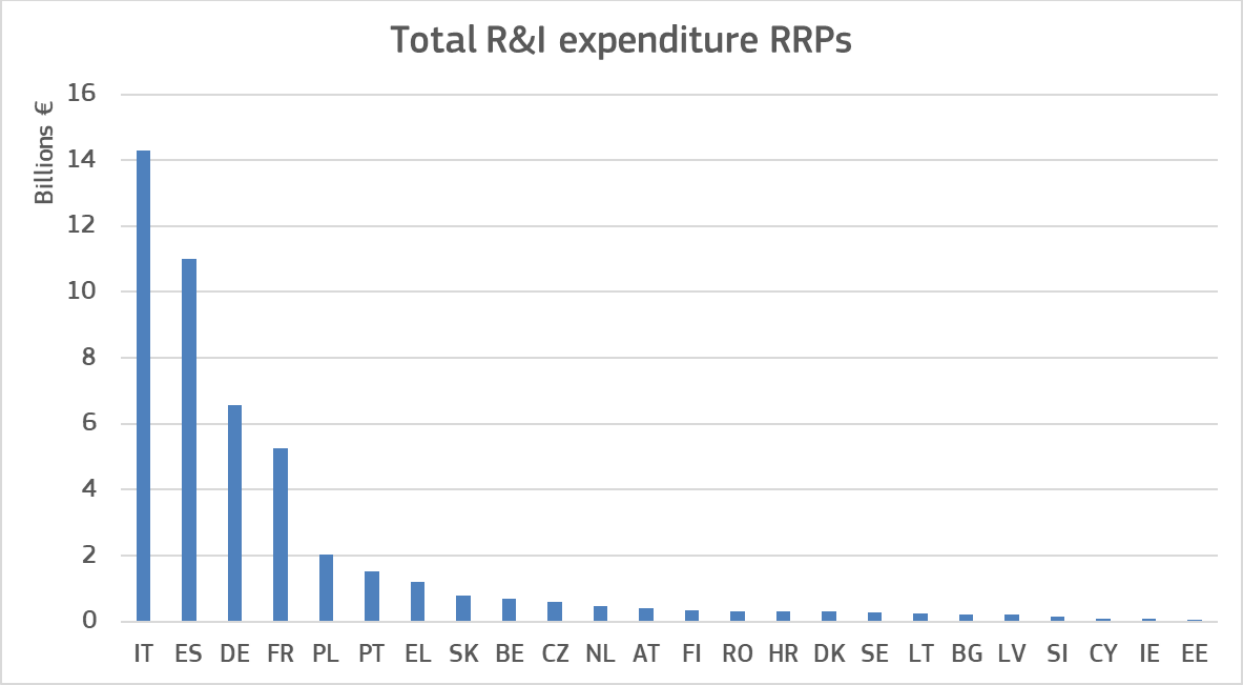
Input paper

1. Introduction

1.1. Background

Research and innovation (R&I) are amongst the most powerful tools to boost the Union's prosperity and are instrumental to accelerate the green and digital transitions. R&I has thus been acknowledged as an essential ingredient of the Recovery and Resilience Facility. Overall, the plans developed by Member States are rich in terms of R&I investments and reforms. According to estimates, the total amount of R&I investments across the RRPs represent **EUR 47.4 bn**, representing 9.6% of the RRF funding envelope and nearly half of the Horizon Europe budget. Figure 1 shows the distribution per Member State.

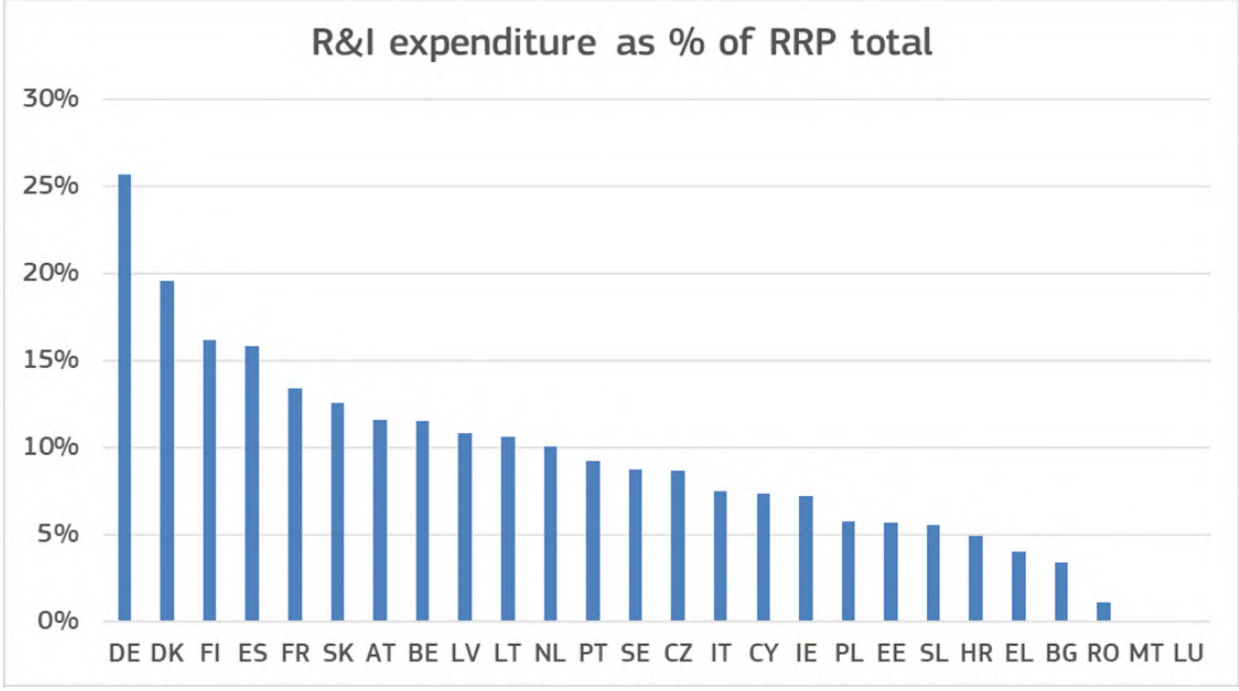
Figure 1: Total R&I expenditure in the Recovery and Resilience Plans (for 26 MS, total volume EUR 47.4 bn)



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database.

As shown in Figure 2, the richness of the plans in terms of R&I-related investments varies significantly from one RRP to the other. R&I investments represent typically between 4% and 13% of the total RRP allocation of the country, with a few outliers below or above this range. With 26% of RRP investments related to R&I, the German plan is the richest in terms of R&I-related expenditure, followed by Denmark (20%), and Finland and Spain (16%).

Figure 2: R&I expenditure as % of total RRP expenditure

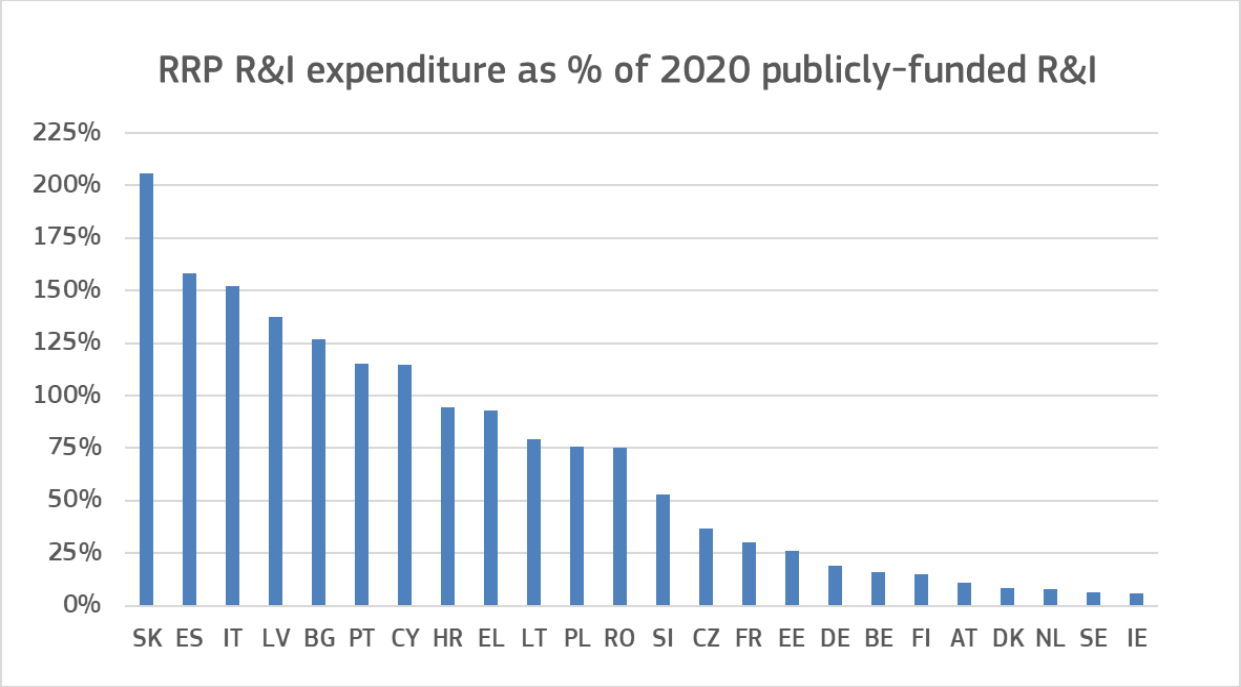


Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database.

The potential impact of the R&I measures in the RRF can be significant, not only in transforming the R&I system in Europe, but notably in accelerating the contribution of R&I to achieving the EU's main objectives and providing rich information for peer policy learning. R&D investment in the EU amounts to EUR 328 bn in 2021[1], thus the R&I investments in the RRF represents about 14% of this amount. In addition, it is important to acknowledge that these investments are proportionally more relevant for those Member States that have traditionally lagged behind in innovation and will go hand in hand with the implementation of ambitious reforms of their R&I systems. As shown in Figure 3, the R&I investments under the RRPs will represent a substantial increase in national public R&D efforts for many countries and thus can be a real game changer. In seven Eastern and Southern Member States, which combine high RRF allocation and low R&D intensity, the RRP R&I expenditure amounts to over one year of publicly funded R&D.

[1] Eurostat.

Figure 3: RRP R&I investment as % of publicly funded R&D, 2020



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database.

1.2. Purpose of the analysis

This analysis seeks to map the potential contribution of the R&I-related measures in the RRF against an important set of socio-economic objectives of the EU, showcasing the importance of R&I for Europe's future. In terms of key EU objectives, the analysis describes the RRF's potential contribution to themes such as the green and digital transition, health, gender equality and territorial cohesion.

The assessment aims at illustrating the linkages between the respective measures from the RRF and the renewed European Research Area (ERA) and the New European Innovation Agenda (NEIA). In the context of ERA, the analysis connects the measures from the RRF with the respective Actions from the ERA Policy Agenda:

- Actions to deepen the internal market for knowledge (e.g. research assessment, attractive research careers);
- Actions to tackle the green and digital transition (e.g. ERA for green transformation, engaging citizens);
- Actions to amplify access to R&I excellence.

As for the New European Innovation Agenda, the analysis maps the connection between the measures from the RRF and the Agenda's key flagships/initiatives, namely:

- Initiatives on access to finance (e.g. close scale up gap);
- Initiatives to improve framework conditions for innovation (e.g. regulatory sandboxes);

- Initiatives to strengthen European innovation ecosystems;
- Initiatives to foster deep tech talents.

The analysis has the potential to further promote peer policy-learning and coordination of measures between Member States while showcasing potential 'innovative' policy instruments. By highlighting the R&I-related investment and reform efforts undertaken by Member States in their RRPs and which are relevant vis-à-vis the ERA policy Agenda and the NEIA, the mapping carried out as part of this exercise may help foster peer-policy learning in certain areas. The exercise will also be useful to detect the potential use of 'novel' policy instruments, such as innovative public procurements or new financial instruments, in the plans.

Finally, the analysis can also help identify potential 'gaps' in the use of the RRF for delivering on the new European R&I policy agenda. While the R&I measures designed under the RRF were not originally intended to contribute to enhancing coordination of EU R&I policies, to boost a renewed European Research Area or to address the innovation gaps in Europe identified in the New European Innovation Agenda, many of these measures will do so. In some instances, it may be observed that the measures included in the RRF may not have a strong connection with particular areas of the new EU R&I policy Framework. While there may be many reasons for this, this may also indicate potential areas for consideration for Member States in view of future investments or reforms using different instruments.

1.3. Methodology

The analysis is based on the 340 R&I-related measures contained in the approved Recovery and Resilience Plans, i.e. all the measures which have been assigned to the three R&I-related policy areas in the FENIX database[2], i.e. 'R&D&I', 'green R&D&I' and 'digital R&D&I'. The initial tagging of these measures was conducted by the lead services (the Directorate General for Economic and Financial Affairs and the Secretariat-General of the European Commission), with support of DG Research and Innovation, and was reviewed by Member States. In a very limited number of cases, measures that were not included in this classification but which were nevertheless deemed relevant in the context of this analysis were added manually.[3] The RRPs of the Member States were used as the main information sources for the content of the 340 R&I related measures, complemented by the Annexes to the Council Implementing Decisions on the approval of the RRPs (summarising the measures and the corresponding milestones and targets). The analysis was conducted for all 26 Member States with an approved RRP by end of October 2022[4]. As for the ERA Policy Agenda[5] and the New European Innovation Agenda[6], the

[2] The FENIX database is an internal database of the European Commission developed to facilitate the monitoring of the implementation of the RRF.

[3] The 37 measures that were added manually are of cross-cutting nature and while relevant for R&I, they were not tagged as such but rather with related categories such as 'Support to SMEs', 'Digitalisation Of Businesses' and 'General, Vocational, And Higher Education: Accessibility, Affordability, Quality And Inclusiveness, Including Digitisation And Infrastructure'.

[4] All Member States except Hungary whose RRP worth €5.8 billion in grants was endorsed by the Commission on 30 November and approved by the Council on 12 December 2022.

[5] https://ec.europa.eu/info/sites/default/files/research_and_innovation/strategy_on_research_and_innovation/documents/ec_rtd_era-policy-agenda-2021.pdf. This source was complemented by internally available, more detailed descriptions of the Actions.

[6] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0332&from=EN

latest policy documents were used as an information source on the content of the respective actions and initiatives.

The R&I-related measures in the RRPs were matched against the key EU objectives, ERA Actions and New European Innovation Agenda initiatives. This matching was conducted through a comparative reading of the R&I-related measures in the RRPs and the respective policy documents by the Country Desks in DG R&I, applying a judgement call and following an internal review process to ensure the consistency and quality of the exercise. The basis of the matching is a table of examples which can be found in Annex 2. This table describes how each EU Objective, ERA Action and innovation flagship was interpreted in the context of this analysis, often in a relatively broad manner, and focusing on the spirit of that action/flagship, as in some cases a very narrow understanding of the action may not have allowed to identify relevant measures in the plans. It should be noted that some of the categories in the different chapters (key EU Objectives, ERA Actions and NEIA initiatives) can have potential overlaps in their definition and thus are not mutually exclusive. These overlaps can notably be found between the key EU Objectives Green and Digital and the ERA Actions 11 and 12, or between the Gender objective and ERA Action 5.

In light of the complexity of the analysis, several points can be noted as additional explanatory points to interpret the results in the right light and avoid potential misinterpretations:

- **This analysis is first and foremost a mapping exercise and not an impact assessment.** This exercise should not be seen as an early impact assessment of the RRF, as most of the R&I measures, both in terms of investments and reforms, have not yet been implemented or have just been launched.
- **Due to the broad nature of some of the measures in the plans, double tagging/counting is inevitable.** The R&I-relevant measures in the RRPs can be multifaceted and have a very broad scope (e.g. Reform aiming at enhancing the R&I capacities of the public research sector in Croatia) and can thus be linked to multiple EU objectives, ERA Actions and NEIA flagships. In addition, the definition of the scope of the different policy actions and flagships has been broadly defined for the purpose of this exercise. The investments can usually not be broken down to identify the specific angles that may be most relevant vis-à-vis each policy area, hence double counting is inevitable. This is an important aspect to bear in mind when analysing and communicating overall investment levels.
- **Comparisons between Member States and/or policy initiatives require context and are not always straight-forward.** Certain Actions (ERA) or Flagships (NEIA) can be more investment- or reform-prone than others (e.g. ERA Action 3 on Research Assessment is more likely to be addressed by reforms). Certain Actions can be more relevant to certain MS than others, e.g. ERA Action 16 (Access to Excellence) for Widening Countries. The importance and role of the RRP also varies from Member State to Member State, and therefore, the role of a particular RRP should be seen in light of the specific national context, where other measures or funding sources beyond the RRF can contribute to a particular policy action/objective.
- **The intervention logic of the RRPs is key to understand the results of the analysis.** The RRPs have a national focus and are meant to address structural weaknesses identified in the European Semester Country-Specific Recommendations (CSRs). In addition, they were designed, and, in a vast majority of cases, officially submitted to the Commission before the publication of

the ERA Policy Agenda and the NEIA. As such, their logic of intervention is not linked to the delivery of the renewed ERA Policy Agenda or the New European Innovation Agenda.

- **It should be noted that the RRPs will be revised in the near future and therefore investment values may slightly change.** The amounts associated with R&I-relevant measures might be subject to slight changes as the Member States will have the opportunity to revise their RRPs, notably in the context of REPowerEU[7]. At this stage, only one Member State (Luxembourg) has officially submitted an amendment of its RRP, with no impact on the level of R&I-related investments foreseen under the plan.

2. Contribution of the RRPs to key EU Objectives

The RRF has proven to be an excellent framework to mobilise R&I for the green transition. As can be seen in Figure 4, in total, under the RRPs, Member States will invest around EUR 15 bn in green R&I, which represents 32% of the total R&I expenditure of the plans. This important focus on green R&I may, in part, be explained by the green expenditure target set out in the RRF Regulation, which requires that at least 37% of the total allocation of each RRP shall support climate objectives.

The RRPs also include R&I measures aimed at fostering the digital transition. Digital R&I investments account for about 10% of the total R&I expenditure of the plans (i.e. EUR 4.6 bn). While significant, this focus on digital may however seem modest when seen in light of the digital expenditure target set out in the RRF Regulation, which requires that at least 20% of the total allocation of each plan shall support digital objectives.

Health R&I has also been an important area of investments. An estimated amount of EUR 3.3 bn[8] of R&I investments will be dedicated to health.

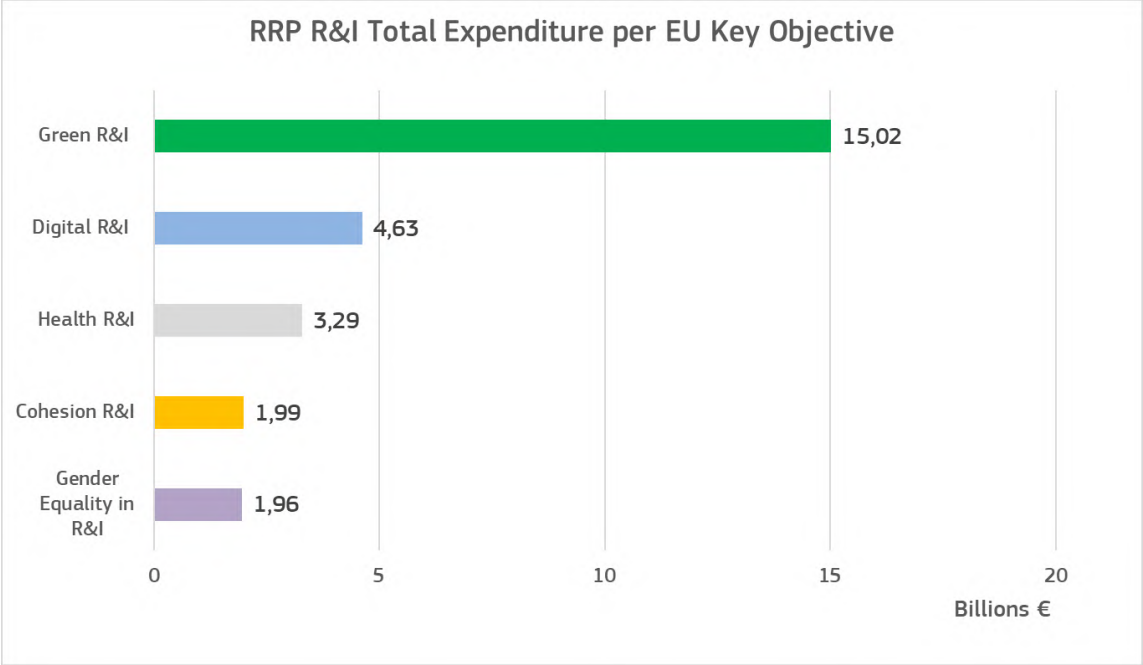
The R&I measures of the RRPs may also contribute to promoting territorial cohesion and gender equality. For both objectives, the relevant R&I investments amount to about EUR 2 bn[9].

[7] Guidance to Member States on the revision of the RRPs in the context of REPowerEU: c_2022_3300_1_en_0.pdf (europa.eu)

[8] Contrary to data on Green and Digital which strictly correspond to the measures which have been assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas in FENIX, data on Health, Cohesion and Gender was obtained based on DG R&I's own analysis and imply some degree of double counting as one investment may contribute to several key EU Objectives.

[9] Contrary to data on Green and Digital which strictly correspond to the measures which have been assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas in FENIX, data on Health, Cohesion and Gender was obtained based on DG R&I's own analysis and imply some degree of double counting as one investment may contribute to several key EU Objectives.

Figure 4: Total R&I Expenditure in RRPs per Key EU Objective



Source: European Commission, DG R&I Unit A1 'European Semester & Country Intelligence', using FENIX Database. Methodological Note: the data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health, Gender and Cohesion was obtained based on DG R&I's own analysis and imply some degree of double counting as one investment may contribute to several key EU Objectives.

As can be seen in Figure 5, in a majority of the plans, the largest volume of R&I expenditure is associated to the Green Objective. Green R&I measures in the RRPs take many different forms, from supporting R&I projects and business-academia cooperation in fields relevant for the green transition in Portugal, to enhancing access to finance for green tech start-ups in Italy, or reforming R&D tax credit schemes to incentivise more companies to engage in green R&D activities in Denmark. An important focus on low-carbon and/or decarbonised hydrogen is also noticeable in the plans, including through measures supporting key EU initiatives such as the Hydrogen Valleys (e.g. creation of new Hydrogen Valleys in Southern Italy) or the IPCEI on Hydrogen (e.g. in Austria or Germany). In some cases, the planned investments are supported by reforms of the policy and administrative governance of the R&I system, with a view to strategically steer the evolution of the whole R&I innovation system in line with the needs of the economy and society. This is notably the purpose of the revision of the political governance of the 'Investments for the Future Programme' foreseen under the French plan.

Digital-related R&I measures are present in 17 plans, with many measures directly contributing to EU-wide initiatives in the field of digital technologies. For example, Austria has foreseen investments in the context of the IPCEI on Microelectronics and Connectivity, while Bulgaria plans to build a quantum communication system as part of EuroQCI. Participation to Horizon Europe Partnerships in digital fields is also foreseen, as in the case of the Greek RRP which includes investments supporting EuroHPC and the

Key Digital Technologies (KDT) partnership[10]. The digital-related R&I investments planned under the RRPs are sometimes accompanied by relevant reforms. For instance, Germany will develop a national data strategy, as part of the federal government's umbrella strategy in the field of digitalisation.

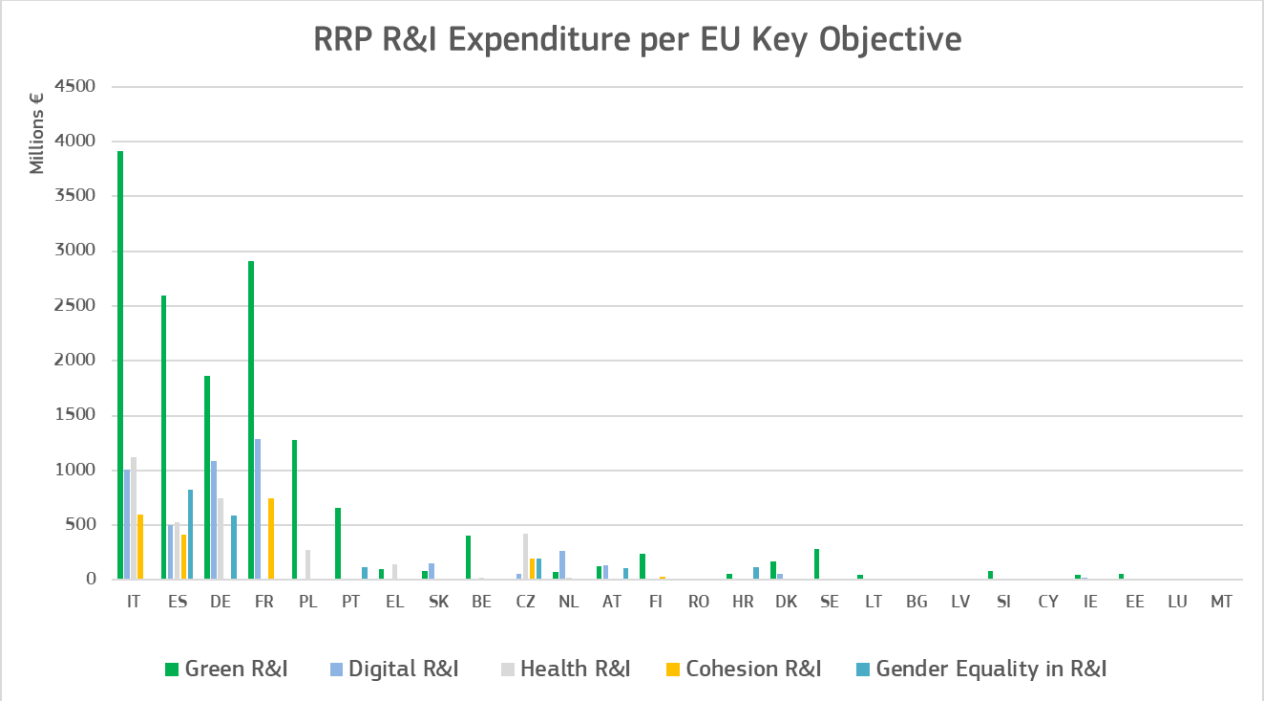
Ten RRPs contain measures supporting health R&I, including dedicated support programmes and the creation and/or upgrade of relevant infrastructures. In the cases of Czechia and Greece and in contrast to most RRPs, health has been the primary focus of the thematic R&I investments foreseen under their plans. Czechia notably intends to support four research consortia in various health disciplines and to set-up the Czech Oncological Institute as a one-stop-shop for cancer prevention, diagnostic and treatment, while Greece will support applied research for precision medicine under the Hellenic Precision Medicine Network.

R&I measures aimed at strengthening regional R&I ecosystems and fostering territorial cohesion within Member States are present in a few RRPs. This regional dimension is most present in the plans of large countries such as France, Italy and Spain, in which special attention has been placed on the reduction of regional R&I disparities and the strengthening of local and regional R&I capacities. For instance, France will support the strengthening, transformation and differentiation of higher education, research and innovation ecosystems at local and regional levels while Italy will mobilise RRF funds to foster the development of 'territorial leaders of R&D' bringing together universities, businesses and local communities working on sustainability projects. In the case of Spain, investments supporting territorial cohesion are accompanied by reform measures aimed at enhancing R&I policy coordination between the national government and the regions, in particular through the set-up of 'supplementary R&D&I plans' elaborated in line with regional Smart Specialisation Strategies.

While gender is often a cross-cutting dimension and not always easily identifiable in the description of the RRP measures, the exercise shows that some RRPs contain specific measures aimed at actively promoting gender equality in R&I and/or better integrating the gender dimension in research content. Gender-related measures in the RRPs include a diversified set of measures such as programmes supporting women entrepreneurs (as in the German RRP for example) or measures aimed at increasing the attractiveness of STEM studies for women (as in the Austrian RRP, which contains a measure aiming at increasing the proportion of women within engineering graduates by 5%) or funding for research projects addressing the gender bias (see Country Fiche of Croatia for more details). More broadly, in the case of Spain, the gender dimension has been addressed in a comprehensive manner through the integration of a gender mainstreaming approach under the reform of the Science Law (see Spain Country Fiche for more information).

[10] Please note that this investment was not assigned to the 'Digital R&D&I' policy area in FENIX and has therefore not been included in the calculation of the digital-related R&I investments of the Greek RRP.

Figure 5: R&I Expenditure in RRPs per EU Key Objective



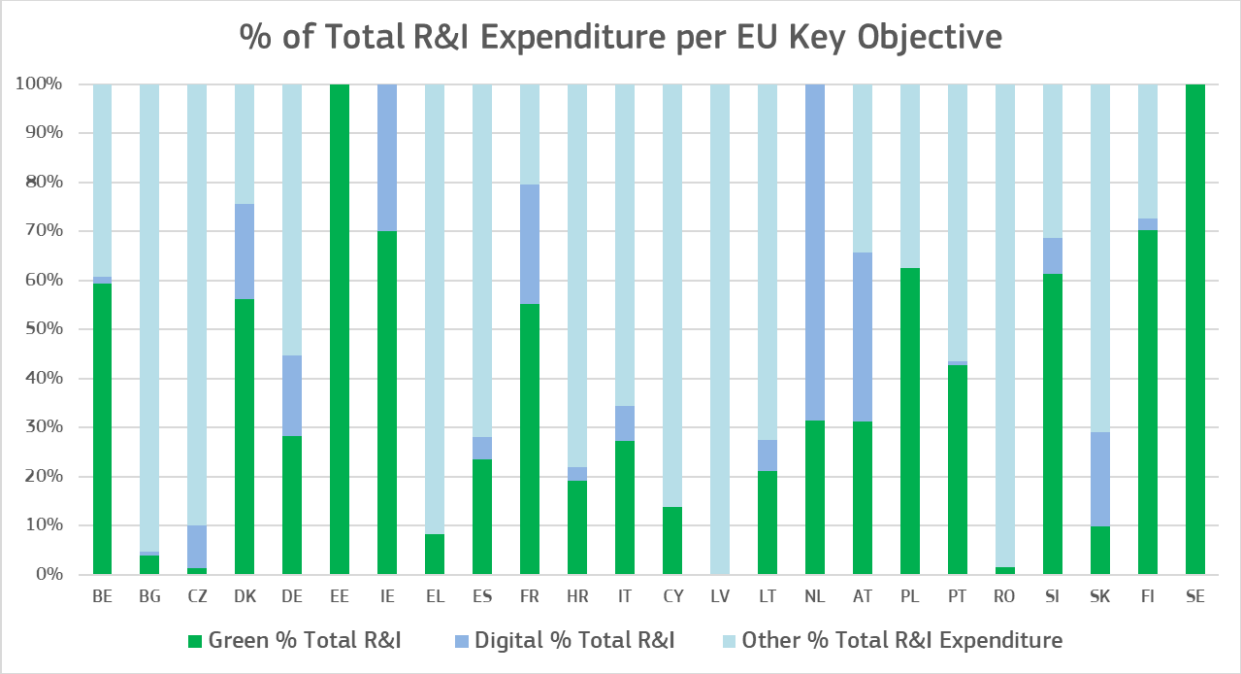
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database.; Methodological Note: the data on Green and Digital R&I were taken from the FENIX database, considering only those measures that were assigned to the Green R&D&I and Digital R&D&I policy area (either as primary or secondary policy areas). Instead, the data on Health and Cohesion were obtained based on DG RTD own analysis and imply some degree of double counting with the Green and Digital R&I expenditure due to overlaps between EU key objectives. The investments made by some Member States are not visible due to large difference between invested amounts, for more details please consult the Figures 12-15 in the Annex.

As shown in Figure 6 some Member States have devoted a very significant share of their R&I investment under the RRPs to green and/or digital R&I. In particular, it can be observed that nine Member States (six of which are 'innovation leaders' or 'strong innovators' according to the 2022 European Innovation Scoreboard[11]) have allocated more than half of the R&I expenditure of their plan to green R&I (i.e. Sweden, Finland, Denmark, Belgium, Estonia, Ireland, France, Slovenia, Poland). Even more strikingly, in the cases of Sweden and Estonia, the foreseen R&I investments are entirely dedicated to green measures. As regards digital, according to FENIX data the Dutch plan is by far the richest in terms of digital R&I investments, and the three other countries which have allocated more than 20% of their RRP R&I investment to digital are Austria (34.6%), Ireland (30%) and France (24.4%)[12]. These four plans include a diversified set of measures aimed at fostering R&I in key digital technologies, with a particular focus on quantum and AI (see respective Country Fiches for more details).

[11] European innovation scoreboard (europa.eu)

[12] These shares have been calculated based on the measures which have been assigned to the "digital-related R&D&I" policy area in the FENIX database, either as primary or secondary policy area. Other R&I measures which have not been assigned to this policy area may potentially be relevant vis-à-vis the Digital objective. When such measures were identified during the mapping exercise, they have been tagged separately and included in the relevant Country Fiches so as to give a wider picture of the 'digital-R&I' dimension of the plans.

Figure 6: Percentage of R&I Expenditure in RRPs per EU Key Objective



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: This chart is based only on those measures that were assigned to the Green R&D&I and Digital R&D&I policy area (either as primary or secondary policy areas) in the FENIX database in order to avoid double counting.

3. Contribution of the RRPs to a new EU R&I Policy landscape

3.1. The European Research Area Policy Agenda

The new ERA Policy Agenda sets out 20 concrete ERA Actions for the period 2022-2024 to contribute to the priority areas defined in the Council Recommendation on a Pact for Research and Innovation in Europe.[13] The different Actions fall into four different groups, namely (1) to deepen a truly functioning market for knowledge, (2) to take up the challenges posed by the twin green and digital transition, and increasing society's participation in the ERA, (3) to amplify access to research and innovation excellence across the union, and (4) to advance concerted research and innovation investments and reforms.[14] This analysis focuses on 13 ERA Actions, as per the methodology described in Annex 2.[15] Of these, no

[13] https://ec.europa.eu/info/sites/default/files/research_and_innovation/strategy_on_research_and_innovation/documents/ec_rtd_era-policy-agenda-2021.pdf

[14] Descriptions of the different Actions can be found in Table 8 in the Annex.

[15] This includes the 14 ERA Actions which, based on both written and oral commitments, passed the threshold defined in the Council Conclusions adopted in November 2021 (cut off for this report: October 2022), except for Action 19 on establishing the ERA monitoring mechanism which was not included in this analysis.

relevant reform or investment was identified for ERA Action 6 (Academic Freedom), hence it is not illustrated in the following figures and tables.

In this section, the results of the analysis on the ERA policy agenda and the relevant R&I relevant measures from the RRPs are described, (1) related to reform efforts and (2) related to investment efforts.

Relevant reform efforts in the MS

The findings from the analysis show that the R&I-relevant reforms in the RRF will contribute significantly to the implementation of the ERA Actions. While for most Actions at least one relevant reform was identified, the number of relevant measures per Actions varies strongly, overall. This rather strong divide between highly covered and less covered Actions may, in part, be explained by the different nature and scope of the policy actions. The distribution of reforms is illustrated in the following **Error! Reference source not found.**.

Table 1: Reforms in the RRPs linked to the ERA Policy Agenda

Member States	ERA-1: EOSC	ERA-3: Research Assessment	ERA-4: Researchers & Careers	ERA-5: Gender Equality	ERA-7: Knowledge Valorisation	ERA-8: Research Infrastructure	ERA-10: Missions & Partnerships	ERA-11: Energy	ERA-12: Green & Digital	ERA-13: Universities	ERA-14: Citizens Engagement	ERA-16: Access to Excellence
Bulgaria	○	●	●	○	●	○	○	○	○	●	○	●
Czech Republic	○	○	○	○	○	●	○	○	●	○	○	●
Germany	○	○	○	○	○	●	○	○	○	○	○	○
Greece	○	○	●	○	●	○	○	○	○	●	○	●
Spain	○	●	●	●	●	○	●	●	●	●	○	○
France	○	●	●	○	●	○	○	○	●	○	●	○
Croatia	●	○	●	○	●	○	○	○	●	●	○	●
Italy	○	○	●	○	●	○	○	○	○	○	○	○
Cyprus	○	○	○	○	●	●	○	○	○	○	○	●
Latvia	○	○	●	○	○	○	○	○	○	●	○	●
Lihuania	○	○	●	○	●	●	○	○	●	○	○	●
Luxembourg	○	○	●	○	○	●	○	○	●	○	○	○
Malta	○	○	○	○	○	○	○	○	○	○	○	●
Austria	○	○	●	●	●	●	○	○	○	○	○	○
Poland	○	○	○	○	●	●	○	●	●	○	○	●
Portugal	○	○	○	●	●	○	○	○	●	○	○	●
Romania	○	●	●	○	●	○	○	○	○	○	○	●
Slovenia	○	●	●	○	●	○	○	○	○	○	○	●
Slovakia	○	●	○	○	●	○	○	○	○	●	○	●

Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The table only contains ERA Actions to which R&I reforms from the RRPs could be linked.

The largest number of the reforms (45) can be linked to Action 16 (Access to Excellence). For this analysis all measures aiming at strengthening the R&I system of Widening Countries and thereby contributing to bridging the innovation divide were considered. Therefore, a relatively large number of reforms can be connected to this Action.[16] The analysis shows that all Widening Countries include reforms with a linkage to this Action. Reforms that were identified as relevant for this Action are very diverse, covering a wide array of themes. For instance, the RRP drafted by Slovakia includes the measure 'Reform of governance, evaluation and support in science, research and innovation'. This includes an amendment of the RDI relevant legislation, which shall enhance the RDI governance structure and strengthen inter-ministerial coordination of RDI policies. In the case of Lithuania, one relevant reform has the objective of establishing a policy implementing agency which is expected to promote more active participation of Lithuanian applicants in European and international R&D&I programs (see also Country Fiche of Lithuania).

[16] The fact that reforms to improve access to excellence are frequent in Widening Countries is in line with the intervention logic of the RRF, building on previous Country Specific Recommendation and Country Reports.

Many RRP reforms are contributing to the implementation of Action 7 (Knowledge Valorisation). Improving knowledge and technology transfer activities is a key priority across Member States.[17] A total of 21 relevant reforms across 14 Member States were identified as relevant to the topic. For example, in its RRP, Poland includes a reform to strengthen cooperation mechanisms between science and industry. The reform will address information flows between academia and businesses and increase the update of research results and improve valorization (see also Country Fiche for Poland). In the case of Slovakia, one measure attempts to transform the Slovak Academy of Science (SAS) into a public organisation to stimulate multi-source funding and cooperation with the private sector (see Country Fiche for Slovakia).

Many reforms included in the RRPs can be linked to ERA Action 4, targeting researchers and careers. In their RRPs, 12 Member States are adopting reforms (13 in total) promoting attractive and sustainable research careers as well as geographic, transdisciplinary and intersectoral mobility across the ERA. For instance, in its RRP, Croatia includes the creation of a framework for attracting students and researchers to STEM and ICT fields. The concerned reform aims at making research careers more attractive through transparent and merit-based recruitment and by addressing burdensome administrative processes (see also Country Fiche for Croatia). Similarly, in France it is attempted to strengthen the attractiveness of research careers through better remuneration and new recruitment channels, including 'tenure tracks' (see also Country Fiche for France).

Other ERA Actions, for instance the one on EOSC (ERA Action 1), the one on Missions and Partnerships (ERA Action 10) and the one on Citizen Engagement (ERA Action 14) could solely be linked to the RRP reforms of a single Member State:

- **Croatia – ERA Action 1**: In the context of larger reform efforts, the country aims at developing an information system (CroRIS) that will promote open science in a way that will enable visibility, transparency and public availability of research data.
- **Spain – ERA Action 10**: The Science and Innovation "Missions", as defined in the Spanish Strategy for Science, Technology and Innovation, represent an instrument of national innovation policy to combine the efforts made by the EU country-specific priorities.
- **France – ERA Action 14:** The Research Law includes measures to strengthen relations between science and society, including the creation of the label "Science Avec et Pour la Société" for institutions which are committed to implement actions on scientific mediation/communication, valorising scientific expertise in the media and citizens' participation in research.

Relevant investments in the MS

The Recovery and Resilience Plans contain a significant volume of investments that are contributing to achieving the ERA Policy Agenda. Member States have committed substantial resources to R&I investments that will help them in the implementation of the ERA Policy Agenda. The investments per ERA Action are illustrated in Figure 7**Error! Reference source not found.**.

The largest share of the RRP R&I expenditure planned by Member States contributes to ERA Action 12 for green and digital. Through the Recovery and Resilience Plans, national governments are investing

[17] The fact that many reform measures aimed at improving knowledge transfer and valorisation are present in the RRPs may also be explained by the relatively frequent coverage of this challenge in past European Semester Country Reports and Country-Specific Recommendations, which the RRPs were meant to address.

about EUR 29 bn[18] in Green and Digital R&I, specifically in measures supporting the development of low-carbon technologies for energy-intensive industries and/or circular technologies or technology infrastructures. This is in line with the specific expenditure target set out in the RRF Regulation on both of these topics. In addition, national governments are substantially contributing to **ERA Action 11** by investing about EUR 11 bn specifically for research and innovation in the field of Green Energy.

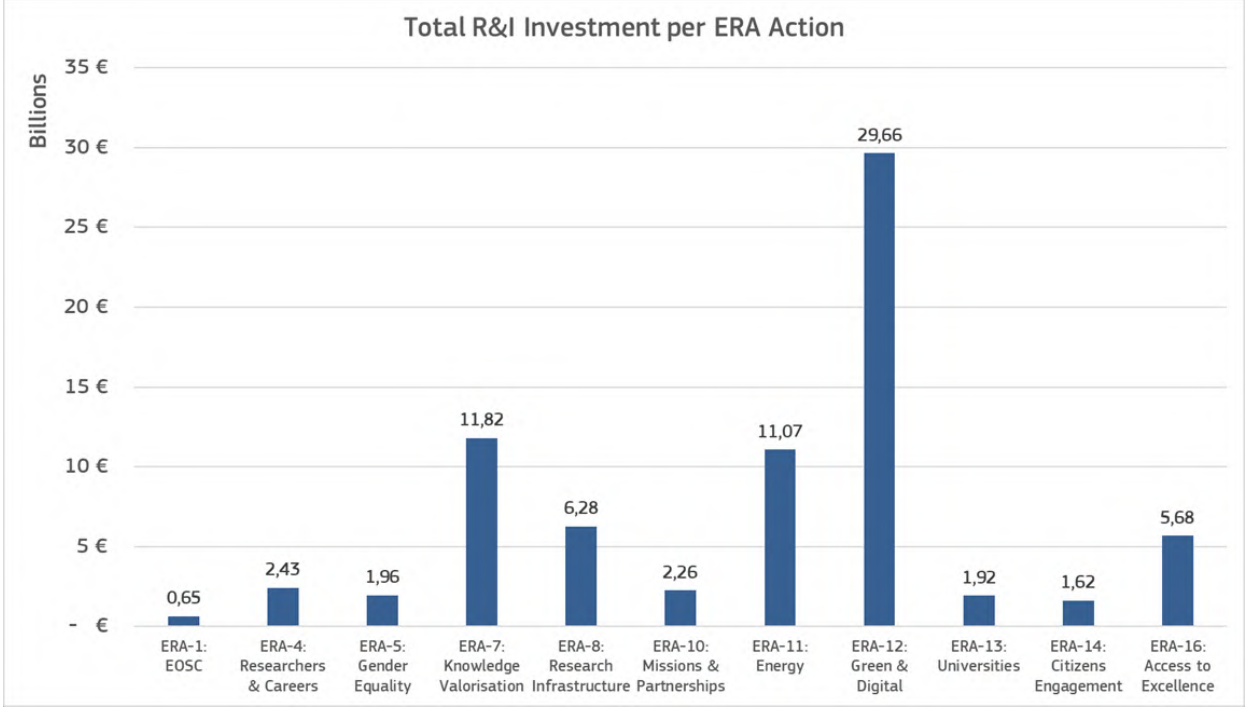
The RRPs also include substantial investments supporting ERA Action 7. The investment that Member States are making to promote knowledge valorisation are approximately EUR 12 bn.[19] Frequent links to this topic can also be connected back to the intervention logic of the Recovery and Resilience Facility, insofar as science-business linkages is a challenge which was relatively frequently covered in previous European Semester Country Reports and Country Specific Recommendations, which the RRPs were meant to address.

Limited RRP R&I expenditure can be linked to ERA Actions 1 (EOSC) and 14 (Citizen Engagement).

1.3

[18] This measure includes double-counting as multiple ERA Actions can be linked to certain measures in the RRPs.
[19] Ibid.

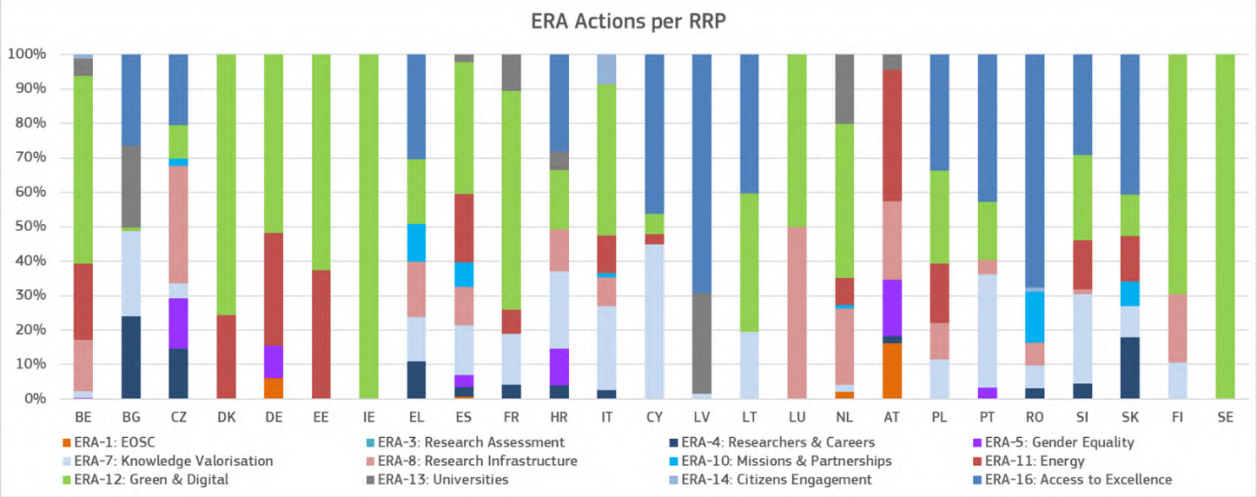
Figure 7: Total R&I investment per ERA Action



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple ERA Actions.

Some RRPs foresee investments in various areas related to multiple ERA Actions while, in other cases, the RRP measures can be linked to a smaller set of Actions. As can be seen in Figure 8, Spain is significantly mobilising RRF funds for the ERA Policy Agenda, with investments that can be connected to nine different ERA Actions. This can be linked back to the overall importance of R&I expenditure in the Spanish RRP (see Figure 1 and Figure 3 in Chapter 1). Czechia, Croatia, Italy, Greece and the Netherlands have included in their RRPs investments that contribute to seven ERA Actions. In their RRPs, Belgium, Austria, Romania, Slovenia and Slovakia invested in six ERA Actions, while Bulgaria, France, Poland and Portugal made investments that can be linked to five ERA Actions. The investments included in the Recovery and Resilience Plans of Germany, Estonia, Cyprus, Latvia, Denmark and Lithuania can be associated to less than five ERA actions. Ireland and Sweden made RRP investments connected to a single ERA action, namely ERA Action 12 for Green & Digital R&I.

Figure 8: ERA Actions per RRP



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple ERA actions.

22 Member States have included investments connected to ERA Action 12 on Green & Digital R&I in their RRP (see Figure 9 below). This broad involvement of Member States in ERA Action 12 can be linked back to the requirement of the European Commission to use the resources of Recovery and Resilience Plans to accelerate the Green and Digital transition, as noted in Chapter 2. An interesting example of the investments related to Action 12 can be found in the Danish RRP which includes a EUR 27 mln investment in organic innovation to improve environmental conditions and contribute to the achievement of Denmark's climate target (see also Country Fiche for Denmark). The Portuguese RRP contains a measure supporting the incorporation of bio-based materials in production processes of the textile and clothing sectors (see also Country Fiche for Portugal). For Sweden, the RRP contains a significant investment to support industrial R&I for the green transition (see Country Fiche for Sweden).

18 Member States are making investments related to ERA Action 7. As can be seen in Examples can be found in the respective Country Fiches.

, ERA Action 7 (Knowledge valorization) was also a key priority across most RRPs. For instance, Spain is reshaping the incentive structure so that knowledge transfer is properly embedded in the remuneration of researchers (see also Country Fiche for Spain). In Bulgaria, the RRP includes a measure that aims at incentivising higher education institutions to develop research development plans for technology transfer and collaborating with industry, including support to start-ups (see also Country Fiche for Bulgaria).

14 RRPs include investments for building and strengthening Research Infrastructures (Action 8), for instance:

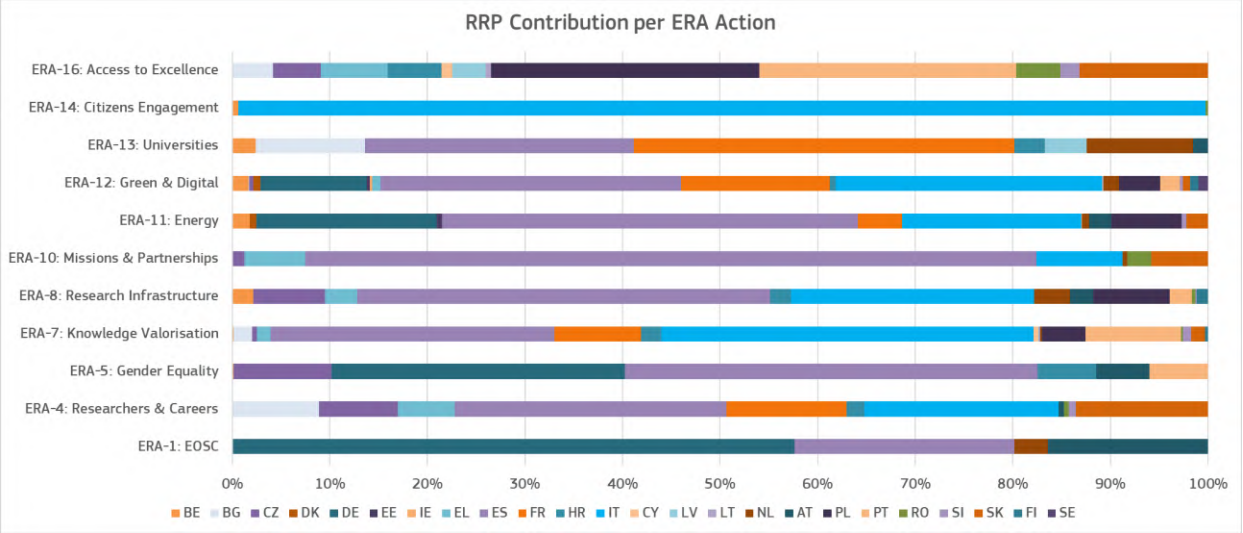
- In Belgium, the RRF will support the establishment of a new infrastructure in the field of nuclear medicine (see Country Fiche Belgium).
- In Romania, the RRP includes measures aiming at upgrading shared research equipment and infrastructures (see Country Fiche Romania).

13 Member States have allocated substantial resources to foster **the green energy transition (Action 11)** and 12 to promote **Access to Excellence (Action 16)**. Seven Member States have included in their plans investments that can linked to **Gender Equality (Action 5)**[20]**.**

In their RRPs, seven Member States have included investments explicitly linked to Missions and Partnerships (Action 10). In the case of Romania, the RRP contains two relevant investments. The first one aims at setting up five centres of competence, for each of the EU Missions, to support their implementation at national level. The other provides complementary funding to RDI projects that are contracted in the context of Horizon Europe Partnerships. In the Greek RRP, one investment provides complementary funding specifically to two European Partnerships, the Euro-HPC (High Performance Computing), and Key Digital Technologies. It should be emphasised that, while the EU Missions may not be explicitly mentioned in many RRPs, there are many thematic investments and reforms which may fall within the scope of the EU Missions.

Only four RRPs included investment related to Open Science (Action 1) while only three contain initiatives related to Citizen Engagement in R&I (Action 14). Further analysis on the main investing Member States per ERA Action can be found in the Annex (Figures 18). Examples can be found in the respective Country Fiches.

Figure 9: RRP Contribution per ERA Action



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple ERA actions.

[20] Please see Chapter 2 on key EU Objectives for examples on measures that could be connected to ERA Action 5.

3.2. The New European Innovation Agenda

The Commission Communication on a New European Innovation Agenda[21] is a step towards delivering an innovation policy to drive a sustainable and resilient recovery, accelerate the twin transitions, and promote deep tech. The goal is to leverage investments in innovation for the development and uptake of strategic technologies for a green, digital and resilient Europe. It consists of four flagship initiatives that are relevant for this analysis[22], each with various actions:

1. **Access to Finance**, enabling measures that facilitate private funding and to close the scale-up gap, by increasing investment by EU-based providers of private and patient capital. This entails measures to attract institutional and other private investors in Europe to invest and benefit from the scaling of European deep-tech start-ups.
2. **Framework Conditions for Innovation**, consisting of experimental approaches to regulation 'regulatory sandboxes', as well as test beds and living labs addressing innovation challenges and regulatory hurdles. This also intends to leverage the role of innovation procurement.
3. **Strengthening the European Innovation Ecosystems and address the Innovation Divide**, aiming at building local and regional networks in less developed regions and connecting these regions to others with complementary capabilities to create European value chains focused on achieving open strategic autonomy in key domains.
4. **Talents for innovation**, focusing on the development of deep tech talent in and to the EU. This also aims to develop entrepreneurial and tech skills, promoting an entrepreneurial and innovation culture, support female entrepreneurship, attract global talent and support technology transfer and knowledge valorization.

In this section, the results of the analysis of NEIA Flagships and the relevant R&I measures from the RRPs are described, (1) related to reform efforts and (2) related to investment efforts.

Relevant reform efforts in the MS

Many Member States included in their RRPs reforms contributing to NEIA Flagship 3 and 4. As can be seen in Table 2, ten countries are adopting reforms which are relevant vis-à-vis Flagship 4, which includes reforms to promote the development of entrepreneurial and tech skills, an entrepreneurial and innovation culture or female entrepreneurship, as well as to attract global talent. For example, the RRP of Lithuania includes measures to attract foreign students, lecturers and scientists, to establish joint and double degree programmes and to improve the quality (and attractiveness) of studies in the country. Regarding Flagship 3, nine RRPs include reforms to foster regional innovation ecosystems and cross-border projects, in particular IPCEIs, as well as to strengthen synergies between the different EU funding streams for R&I. For instance, the Greek RRP foresees a reform aimed at creating a platform to promote Greek start-ups worldwide and connect the innovation network of Greece on a more global scale, including research centers, innovation clusters, competence centers and highly innovative local companies.

[21] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0332&from=EN

[22] Despite being fundamental for the effectiveness of the policies, Flagship 5 is out of the scope of this report because it is mainly about EU actions and coordination, and therefore less relevant in the context of the analysis of the RRPs.

Some RRPs include reforms that can be linked to the other two relevant Flagships, with six RRPs supporting Flagship 1 and seven RRPs supporting Flagship 2, for example:

- **Concerning Flagship 1**, the RRP of Croatia contains a reform for the development of Digital Innovation Hubs, partnering with Venture Capital Funds to provide businesses with funding.
- **Concerning Flagship 2**, the Spanish RRP includes regulatory sandboxes and test-beds for the energy sector in the national regulatory framework, allowing for the introduction of new products or technological solutions, with exceptions or regulatory safeguards to help facilitate R&I in the energy sector.

Spain, Croatia and Austria are the only Member States that have foreseen, in their RRPs, reforms which can be connected to all four NEIA Flagships. Lithuania and Luxembourg have designed reforms which could contribute to the implementation of three NEIA Flagships while Bulgaria, Germany and Latvia to two of them. The rest of the countries had reforms concerning only one or none of the Flagships.

Table 2: Reforms in the RRPs linked to the New European Innovation Agenda

Member State	Flagship 1: Access to Finance	Flagship 2: Experimentation & Public Procurement	Flagship 3: Innovation Ecosystems	Flagship 4: Talents
Bulgaria	●	○	●	○
Czech Republic	○	●	○	○
Germany	○	●	○	●
Greece	●	○	●	○
Spain	●	●	●	●
France	○	○	○	○
Croatia	●	●	●	●
Italy	○	○	○	●
Cyprus	●	○	○	●
Latvia	○	○	●	●
Lithuania	○	●	●	●
Luxembourg	○	●	●	●
Austria	●	●	●	●
Poland	○	○	○	○
Portugal	○	○	○	○
Romania	○	○	●	○
Slovenia	○	○	○	●
Slovakia	○	○	○	○

Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database.; Methodological Note: Table only contains NEIA Flagships to which R&I reforms from the RRPs could be connected.

Relevant investment efforts in the MS

In their RRPs, Member States have included many investments which could be instrumental to the implementation of the New European Innovation Policy Agenda. As can be seen in Figure 10, national

governments have allocated substantial financial resources to R&I investments that will help implement the NEIA.

The largest share of the RRP R&I expenditure planned by Member States can be linked to Flagship 3 on Innovation Ecosystems. Through their Recovery and Resilience Plans, national governments are investing up to about EUR 20 bn[23] in building strong local and regional innovation ecosystems. This result may also reflect the relatively broad scope of this flagship, especially in the way it was interpreted in the context of this exercise (as described in Annex 2). Notably, it should be mentioned that, as part of this mapping, the RRP measures that have been linked to ERA Action 16, and which thus aim at strengthening the whole R&I ecosystem of widening countries, have also been linked to Flagship 3. The analysis shows that the countries that are investing the higher absolute amounts in relation to flagship 3 are Italy, Spain, Germany and France. It is also noteworthy that several Widening Countries such as Bulgaria, Estonia, Latvia, Portugal and Slovakia have made substantial investments in line with Flagship 3, having committed more than 90% of their R&I investment to initiatives related to the strengthening of their innovation ecosystems.

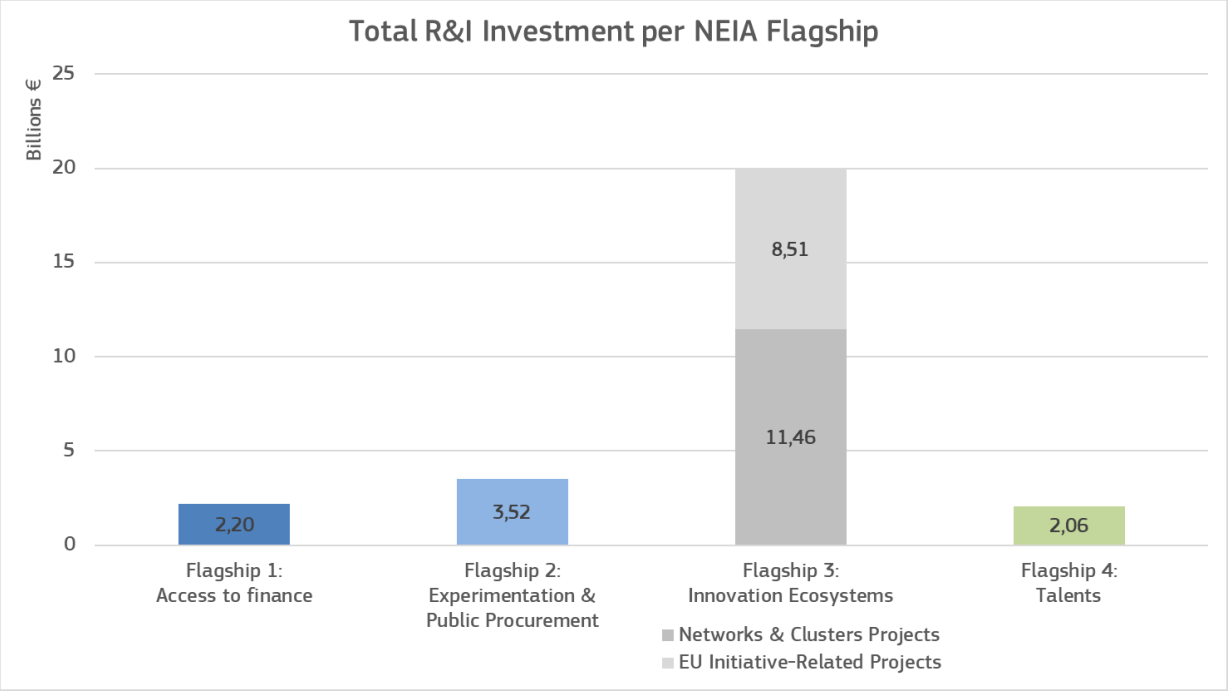
The relevant investments that can be linked to Flagship 3 fall into two main categories, those investments that aim at supporting innovation ecosystems at regional and national levels (e.g. through network or cluster initiatives) and the ones that relate to EU-wide initiatives (e.g. linked to IPCEIs). For instance:

- **The RRP of Portugal** includes the building of a nation-wide infrastructure network to strengthen the blue economy innovation ecosystem included in the Portuguese RRP (see Country Fiche for Portugal for more information).
- **The RRP of Finland** includes investments for the development of microelectronics value chain, directly contributing to the **IPCEI on microelectronics** (see Country Fiche for Portugal for more information).

Significant RRP R&I investments also support the other three flagships. The analysis shows that, through their RRPs, Members States can mobilise up to EUR 2,2 bn[24] for Flagship 1, with measures aiming at improving access to finance and supporting deep tech start-ups. Up to about EUR 3,5 bn[25] of the RRP investments can be connected to Flagship 2 (Initiative to foster framework conditions for innovation). A total investment up to about EUR 2 bn[26] can be connected to Flagship 4 on talents.

[23] This measure includes double-counting as multiple initiatives of the New European Innovation Agenda can be linked to certain measures in the RRPs.
[24] This measure includes double-counting as multiple initiatives of the New European Innovation Agenda can be linked to certain measures in the RRPs.
[25] Ibid.
[26] Ibid.

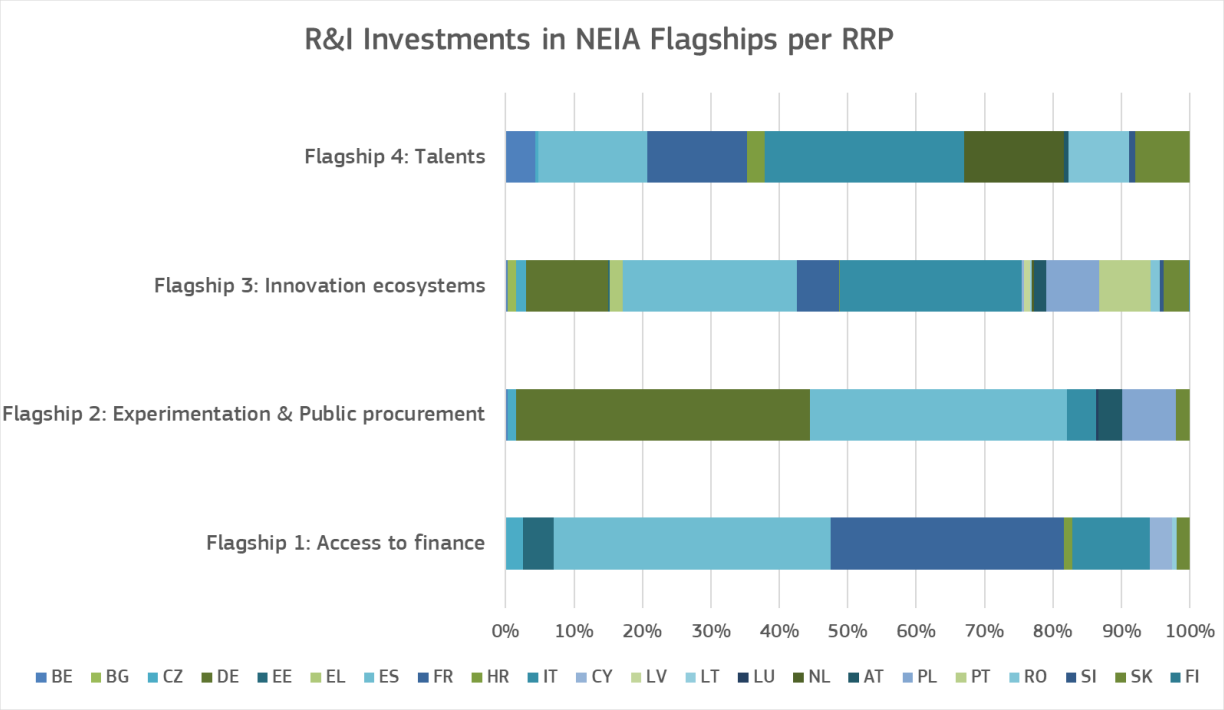
Figure 10: Total R&I Investment per NEIA Flagship



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple NEIA flagships.

In absolute terms, the RRPs of a few countries provide most of the investments across the four Flagships (See Figure 11). The Italian RRP includes the largest investments related to Flagships 3 and 4 and the German RRP includes the largest investment in Flagship 2. The Spanish RRP foresees the largest investment in Flagship 1 and the second-largest investments across the other three Flagships.

Figure 11: RRP Contribution per NEIA Flagship



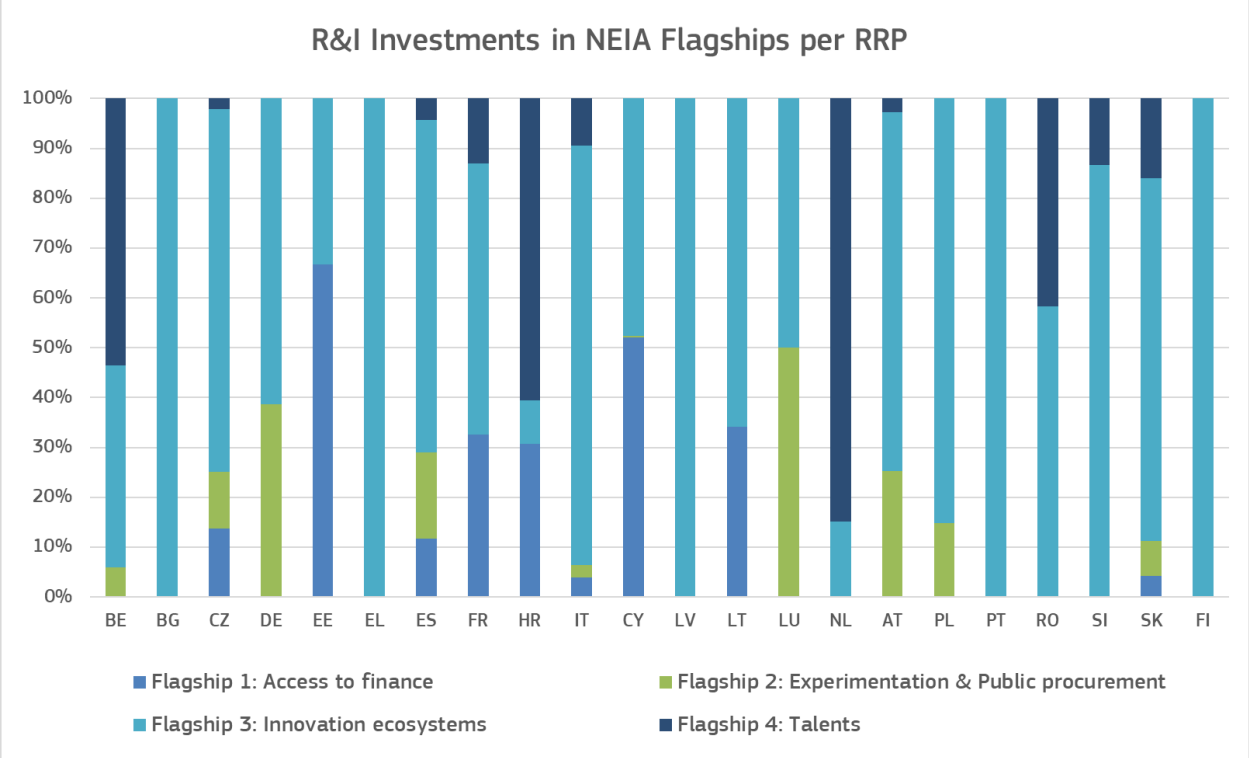
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple NEIA flagships.

In relative terms, the RRPs of some Member States are also significantly contributing to the implementation of the NEIA Flagships (See Table 6 in the Annex)**.** The RRPs of Bulgaria, Estonia, Latvia, Portugal and Slovakia are substantially contributing to Flagship 3, with over 90% of their RRP R&I expenditure related to the strengthening of their innovation ecosystems. For instance, and in relation with synergies between EU funding sources, the measure 'Support for projects aiming at the development and application of top digital technologies' from the Slovakian RRP aims among other things at serving as a co-funding mechanism for projects selected under directly managed EU programmes (such as Digital Europe, Horizon Europe and the Connecting Europe Facility).

The investments included in the RRP of Cyprus are focused on improving access to finance, with about 80% of its RRP R&I expenditure related to Flagship 1. More specifically, the Cypriot plan includes the provision of funding through innovation programmes (e.g., Fast-Track Innovation, Pre-Seed, Seed, Innovate) to improve access to finance for innovative SMEs and startups. The Netherlands and Romania are committing about 65% and 60%, respectively, of their RRP R&I expenditure to the promotion of talents in line with Flagship 4. For example, the Romanian RRP foresees the provision of grants to attract 100 top international researchers in the country.

Concerning the number of RRPs contributing to the NEIA flagships, 22 RRPs include significant investments to strengthen Innovation Ecosystems (Flagship 3). Eleven plans foresee investments supporting Talents (Flagship 4), while nine Member States committed resources to enhance Access to finance (Flagship 1) and ten plans include investments related to Experimentation and Public Procurements (Flagship 2) (See Figure 12).

Figure 12: Investments linked to NEIA Flagships per RRP



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple NEIA flagships.

3.3. Innovative Policy Instruments

The Recovery and Resilience Plans have represented an opportunity for national policymakers to deploy innovative policy instruments. Our analysis shows that some Member States have notably included, in their RRPs, instruments such as Innovative Public Procurements and New Financial instruments, which are particularly interesting as their successful implementation often relies on a wide engagement across the government, beyond the ministries responsible for R&I policy.

For example, Lithuania and Spain have included measures to leverage public procurement for innovation. Specifically, Lithuania's RRP includes a reform aiming at funding 100 innovative public procurement projects to boost demand for innovation, with a budget of about EUR 8,5 mln (See Lithuania's Country Fiche for details). Spain included in its RRP measures for pre-commercial public procurement for renewable energy solutions as well as the establishment of the Alliance for Innovation to finance pre-commercial public procurement (See Spain's Country Fiche for details).

In addition, concerning new financial instruments, the Spanish RRP notably foresees participative loans to support companies with innovative and digital business projects and also includes a specific investment aiming at supporting at least 200 women through participative loans granted by the National Innovation Enterprise (Empresa Nacional de Innovación) (See Spain's Country Fiche for details).

4. Main findings

The RRF will mobilise EUR 47.4 billion in R&I-related investment, accompanied by key structural reforms aimed at strengthening national R&I systems. For certain Member States, RRF funding will be a game changer in the development of their R&I systems in the years to come, should the investment and reform efforts be maintained over time. As such, the RRF can be a powerful tool to help bridge the innovation divide which persists in Europe.

The Recovery and Resilience Plans were designed by Member States in a bottom-up approach, based on country-specific needs and with a view to addressing key structural weakness identified in the context of the European Semester. The plans are therefore extremely diverse in nature. Due to this high heterogeneity, the contribution of the RRPs to key EU Objectives and to a renewed EU R&I policy framework varies from country to country.

To a large extent, the analysis shows that the R&I investments planned under the RRPs have a strong sense of directionality and will contribute to key EU objectives, most prominently the green transition. The important focus on green R&I in the plans also reflects the increasing recognition of the importance of R&I to achieve the green transformation of our economies and societies and meet the objectives of the European Green Deal, which will notably require a strong acceleration of the development and deployment of clean energy technologies.

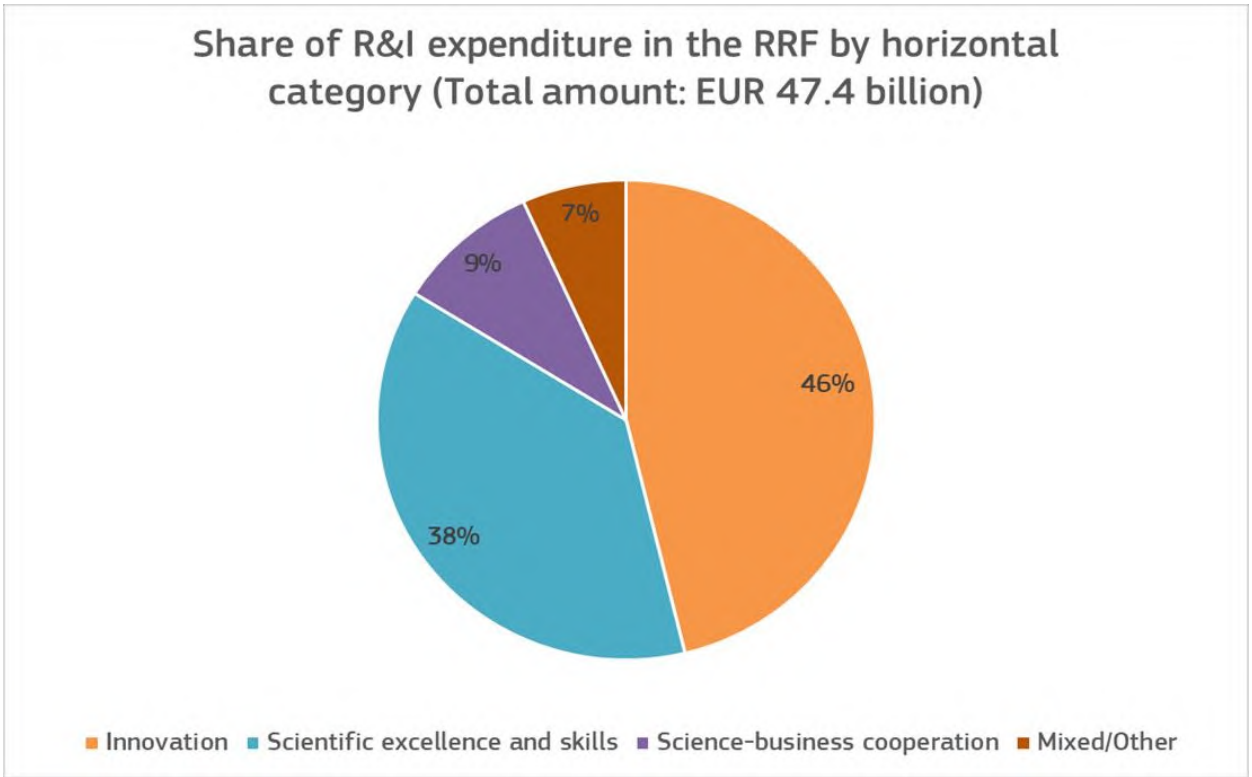
While the RRF is expected to contribute significantly to the implementation of certain ERA Actions and innovation flagships, some gaps in the mobilisation of RRF funding in support of the key EU Objectives, the ERA Policy Agenda and the New European Innovation Agenda can be observed. While the importance and role of the RRP varies from Member State to Member State, and therefore the role of a particular national RRP should be seen in the specific local context, the analysis can provide food for thought to identify future investment areas or reforms that can help further strengthen the construction of a renewed ERA or contribute to the delivery of the New European Innovation Agenda.

Learning from the different investment and reform measures foreseen in the different RRPs may help identify areas for future investments and reforms and enable more targeted peer learning across Member States. Similarly, the identified examples for innovative policy instruments can serve as potential good practices for other Member States in the future.

Annex 1: Background data and graphs

Background data and graphs

Figure 13: Share of R&I expenditure in the RRF by horizontal category (Total amount: EUR 47.4 bn)



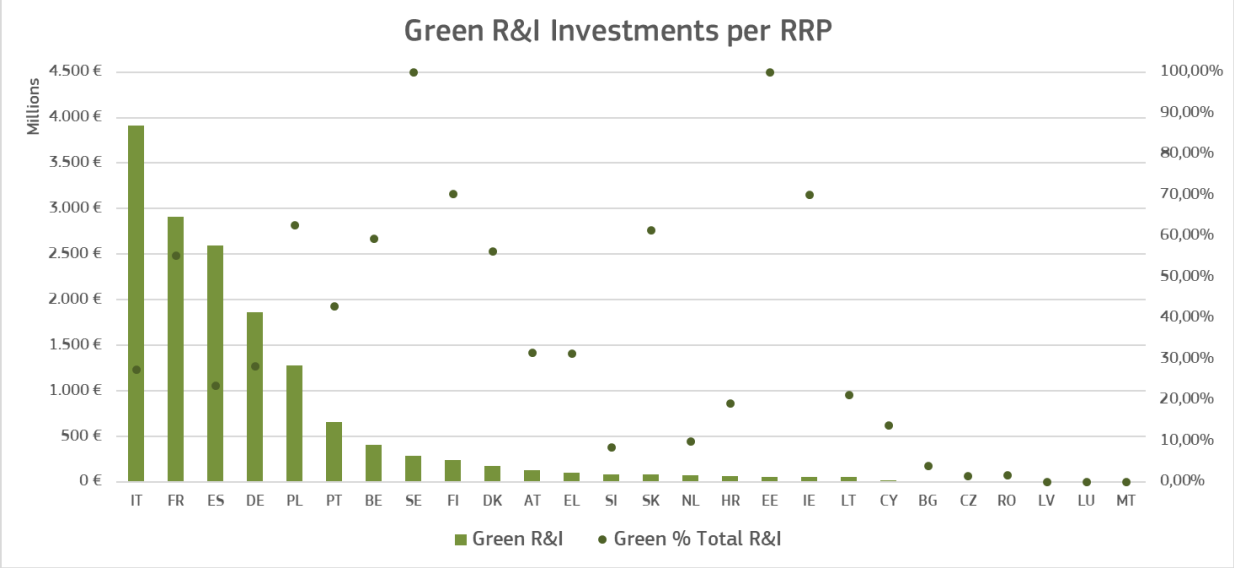
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database.

Table 3: R&I expenditure per Key EU Objective

MS	Green R&I	Digital R&I	Health R&I	Cohesion R&I	Gender Equality in R&I	Total R&I Expenditure
BE	404.725.000	10.000.000	18.000.000	0	2.900.000	681.925.000
BG	8.180.000	1.670.000	0	0	0	211.280.000
CZ	7.854.843	52.980.913	418.702.380	196.371.063	196.371.063	609.143.038
DK	170.958.857	59.000.000	0	0	0	303.958.857
DE	1.859.342.015	1.089.308.655	750.000.000	0	588.235.294	6.580.442.852
EE	54.800.000	0	0	0	0	54.800.000
IE	50.179.500	21.433.500	0	0	0	71.613.000
EL	102.000.000	0	140.370.879	0	0	1.216.602.639
ES	2.591.647.000	500.000.000	527.155.999	411.043.999	828.795.000	11.012.533.998
FR	2.908.700.000	1.284.700.000	0	750.000.000	0	5.263.000.000
HR	59.107.272	8.977.412	0	7.498.838	117.114.606	308.911.506
IT	3.916.000.000	1.005.000.000	1.124.140.000	600.000.000	0	14.299.480.000
CY	12.230.000	0	0	0	0	88.630.000
LV	0	0	715.000	0	0	197.615.000
LT	50.000.000	15.000.000	0	0	0	236.769.000
LU	0	0	0	0	0	0
MT	0	0	0	0	0	0
NL	73.700.000	263.900.000	22.000.000	0	0	472.150.000
AT	125.000.000	138.700.000	13.700.000	0	107.000.000	400.700.000
PL	1.276.000.000	0	273.000.000	0	0	2.039.000.000
PT	655.000.000	12.000.000	0	0	117.130.000	1.530.130.000
RO	5.000.000	0	0	0	0	314.430.000
SI	85.000.000	10.000.000	0	0	0	138.320.000
SK	78.660.000	151.880.000	0	0	0	792.960.000
FI	237.000.000	8.000.000	0	30.000.000	0	337.000.000
SE	286.419.752	0	0	0	0	286.419.752
TOTAL	**15.017.504.239**	**4.632.550.480**	**3.287.784.258**	**1.994.913.900**	**1.957.545.963**	**47.447.814.642**

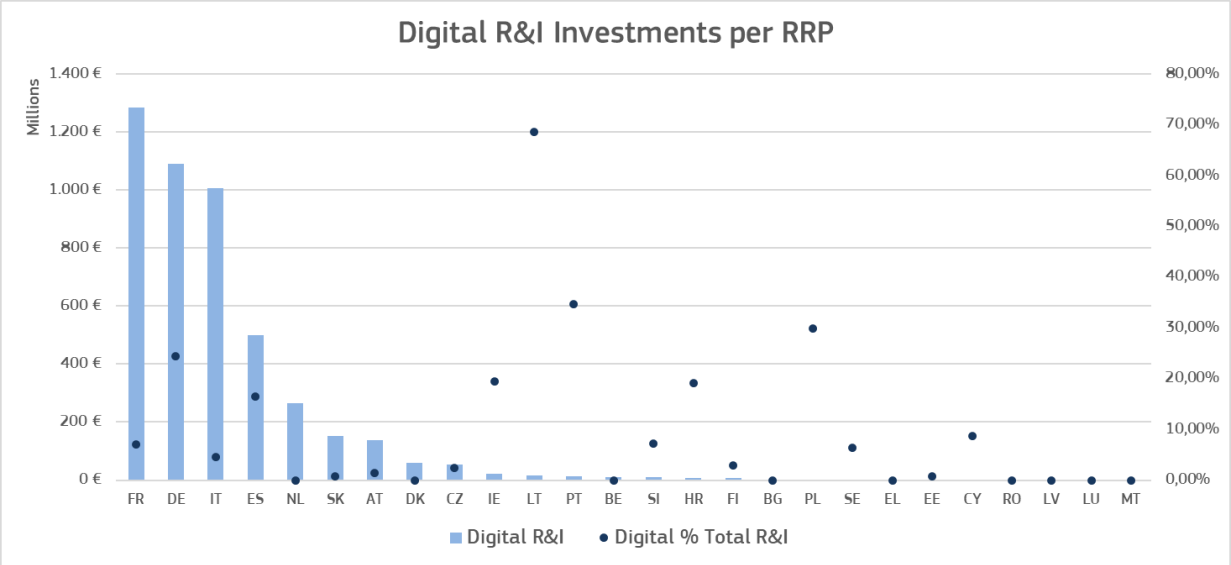
Source: European Commission, DG R&I Unit A1 'European Semester & Country Intelligence', using FENIX Database. Methodological Note: the data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health, Gender and Cohesion was obtained based on DG R&I's own analysis and imply some degree of double counting as one investment may contribute to several key EU Objectives.

Figure 14: Green R&I investment amount and % of total RRP R&I expenditure



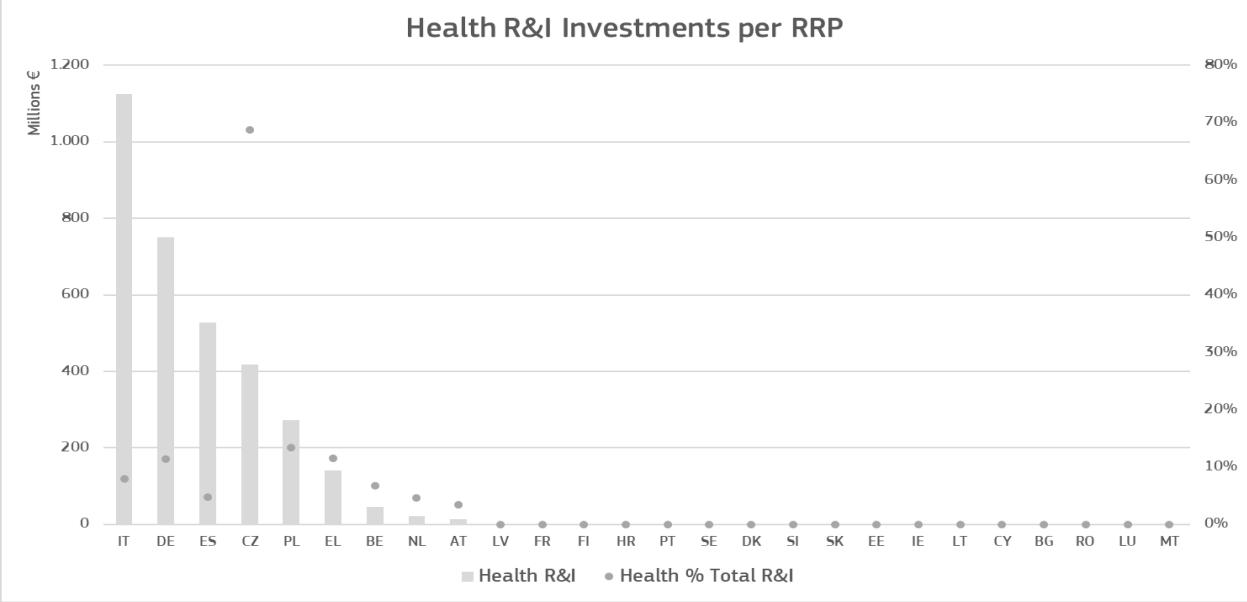
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were taken from the FENIX database, considering only those measures that were assigned to the Green R&D&I policy area (either as primary or as secondary policy areas).

Figure 15: Digital R&I investment amount and % of total RRP R&I expenditure



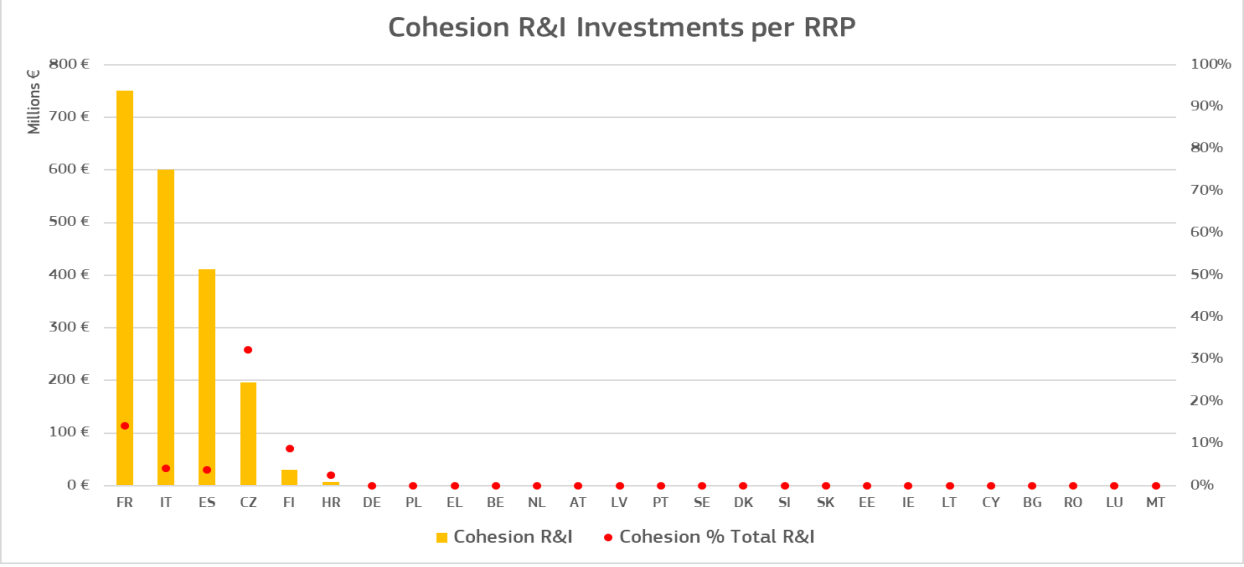
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were taken from the FENIX database, considering only those measures that were assigned to the Digital R&D&I policy area (either as primary or as secondary policy areas).

Figure 16: Health R&I investment amount and % of total RRP R&I expenditure



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and imply some degree of double counting with the Green and Digital R&I expenditure due to overlaps between EU key objectives.

Figure 17: Cohesion R&I investment amount and % of total RRP R&I expenditure



Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: the data were obtained based on DG RTD own analysis and imply some degree of double counting with the Green and Digital R&I expenditure due to overlaps between EU key objectives.

Table 4: Investments in the Member States per ERA Action

Member States (Millions €)	ERA-1: EOSC	ERA-3: Research Assessment	ERA-4: Researchers & Careers	ERA-5: Gender Equality	ERA-7: Knowledge Valorisation	ERA-8: Research Infrastructure	ERA-10: Missions & Partnerships	ERA-11: Energy	ERA-12: Green & Digital	ERA-13: Universities	ERA-14: Citizens Engagement	ERA-16: Access to Excellence
Beglium	0,0	0,0	0,0	2,9	17,9	136,4	0,0	201,7	496,7	46,4	9,9	0,0
Bulgaria	0,0	0,0	216,4	0,0	222,9	0,0	0,0	0,0	8,7	214,7	0,0	238,6
Czech Republic	0,0	0,0	196,4	196,4	58,9	458,0	28,5	0,0	129,2	0,0	0,0	276,5
Denmark	0,0	0,0	0,0	0,0	0,0	0,0	0,0	74,0	230,0	0,0	0,0	0,0
Germany	375,0	0,0	0,0	588,2	0,0	0,0	0,0	2047,0	3226,1	0,0	0,0	0,0
Estonia	0,0	0,0	0,0	0,0	0,0	0,0	0,0	58,0	96,8	0,0	0,0	0,0
Ireland	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	71,6	0,0	0,0	0,0
Greece	0,0	0,0	140,4	0,0	165,1	207,4	140,4	0,0	242,4	0,0	0,0	390,7
Spain	146,9	0,0	677,1	828,8	3436,3	2655,6	1694,2	4717,0	9136,7	530,0	0,0	0,0
France	0,0	0,0	300,0	0,0	1050,0	0,0	0,0	500,0	4520,0	750,0	0,0	0,0
Croatia	0,0	0,0	44,1	117,1	248,7	134,2	0,0	0,0	189,3	59,7	0,0	311,4
Italy	0,0	0,0	483,0	0,0	4500,0	1560,0	200,0	2040,0	8095,3	0,0	1610,0	0,0
Cyprus	0,0	0,0	0,0	0,0	62,0	0,0	0,0	4,1	8,1	0,0	0,0	64,0
Latvia	0,0	0,0	0,0	0,0	4,6	0,0	0,0	0,0	0,0	82,5	0,0	196,0
Lithuania	0,0	0,0	0,0	0,0	14,0	0,0	0,0	0,0	29,0	0,0	0,0	29,0
Luxembourg	0,0	0,0	0,0	0,0	0,0	10,0	0,0	0,0	10,0	0,0	0,0	0,0
The Netherlands	22,0	0,0	0,0	0,0	20,7	231,4	10,0	82,4	465,4	209,4	0,0	0,0
Austria	107,0	0,0	13,7	107,0	0,0	150,7	0,0	250,0	0,0	30,0	0,0	0,0
Poland	0,0	0,0	0,0	0,0	535,0	490,0	0,0	800,0	1250,0	0,0	0,0	1563,0
Portugal	0,0	0,0	0,0	117,1	1150,7	142,0	0,0	0,0	594,0	0,0	0,0	1496,1
Romania	0,0	0,0	12,0	0,0	25,0	25,0	56,0	0,0	0,0	0,0	4,0	256,0
Slovenia	0,0	0,0	17,2	0,0	100,3	5,3	0,0	55,0	95,0	0,0	0,0	112,2
Slovakia	0,0	0,0	329,5	0,0	164,6	0,0	131,6	243,3	219,1	0,0	0,0	747,3
Finland	0,0	0,0	0,0	0,0	40,0	75,0	0,0	0,0	262,0	0,0	0,0	0,0
Sweden	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	286,4	0,0	0,0	0,0

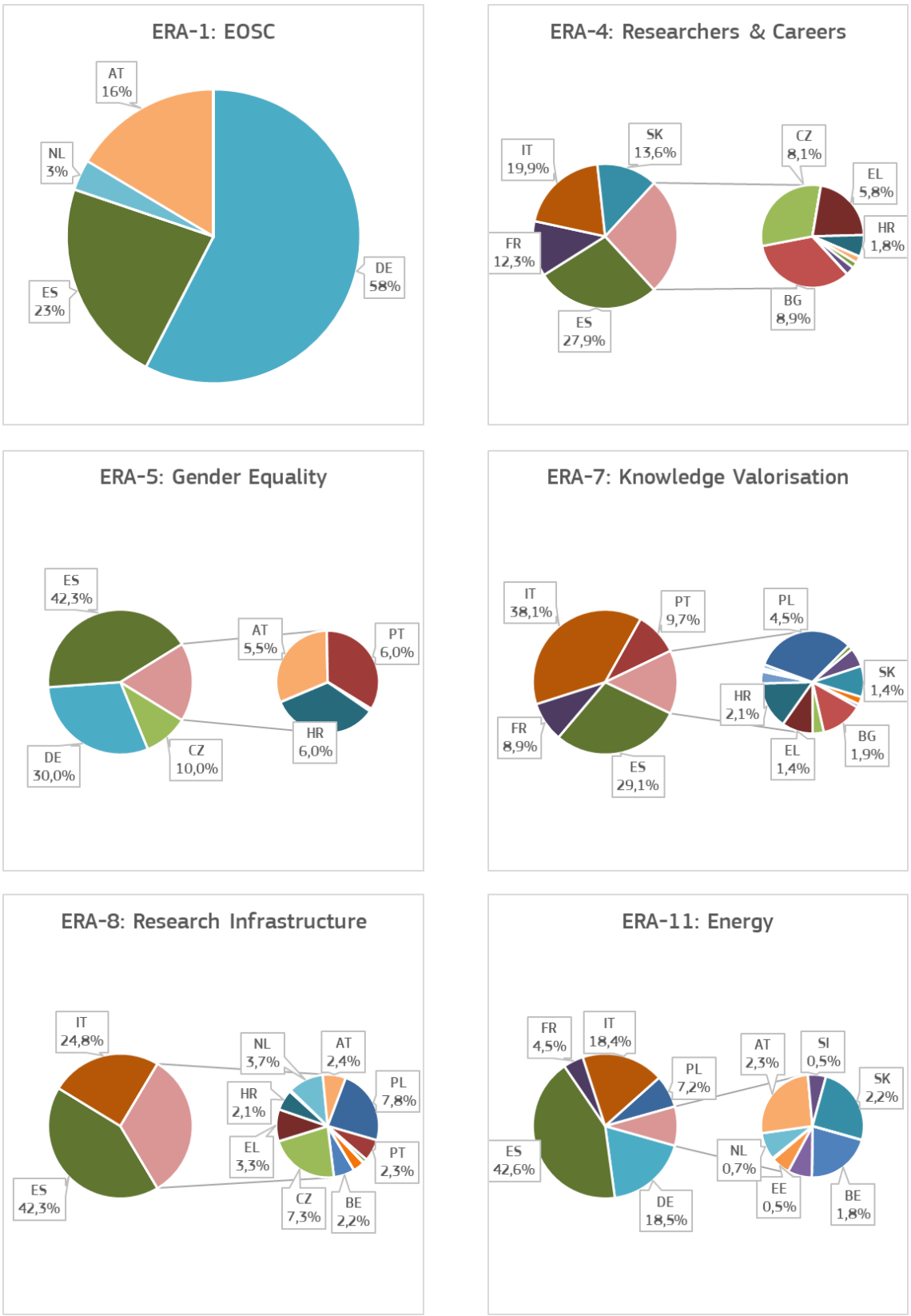
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple ERA actions.

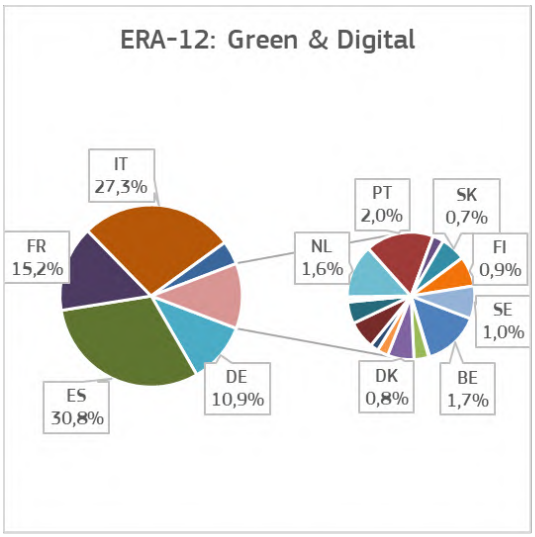
Table 5: R&I Investments per ERA Action as % of total R&I expenditure in each RRP

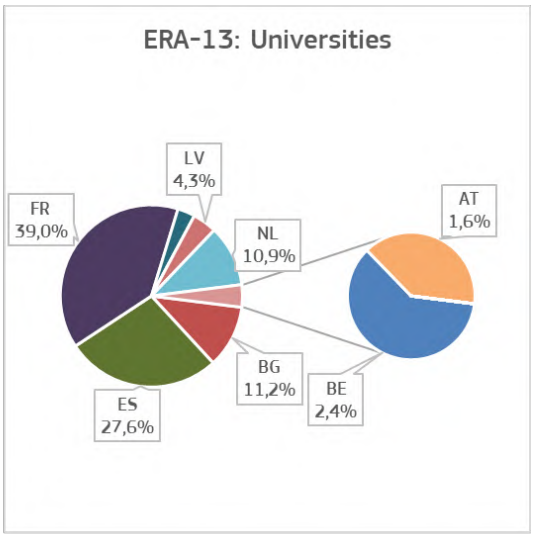
Member States	ERA-1: EOSC	ERA-3: Research Assessment	ERA-4: Researchers & Careers	ERA-5: Gender equality	ERA-6: Academic freedom	ERA-7: Knowledge valorisation	ERA-8: Research infrastructures	ERA-10: Missions & Partnerships	ERA-11: Energy	ERA-12: Green & Digital	ERA-13: Universities	ERA-14: Citizens Engagement	ERA-16: Access to Excellence
Beglium	0%	0%	0%	0%	0%	3%	20%	0%	30%	73%	7%	1%	0%
Bulgaria	0%	0%	102%	0%	0%	105%	0%	0%	0%	4%	102%	0%	113%
Czech Republic	0%	0%	32%	32%	0%	10%	75%	5%	0%	21%	0%	0%	45%
Denmark	0%	0%	0%	0%	0%	0%	0%	0%	24%	76%	0%	0%	0%
Germany	6%	0%	0%	9%	0%	0%	0%	0%	31%	49%	0%	0%	0%
Estonia	0%	0%	0%	0%	0%	0%	0%	0%	106%	177%	0%	0%	0%
Ireland	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
Greece	0%	0%	12%	0%	0%	14%	17%	12%	0%	20%	0%	0%	32%
Spain	1%	0%	6%	8%	0%	31%	24%	15%	43%	83%	5%	0%	0%
France	0%	0%	6%	0%	0%	20%	0%	0%	10%	86%	14%	0%	0%
Croatia	0%	0%	14%	38%	0%	81%	43%	0%	0%	61%	19%	0%	101%
Italy	0%	0%	12%	0%	0%	14%	17%	12%	0%	20%	0%	0%	32%
Cyprus	0%	0%	0%	0%	0%	70%	0%	0%	5%	9%	0%	0%	72%
Latvia	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	42%	0%	99%
Lithuania	0%	0%	0%	0%	0%	6%	0%	0%	0%	12%	0%	0%	12%
The Netherlands	5%	0%	0%	0%	0%	4%	49%	2%	17%	99%	44%	0%	0%
Austria	27%	0%	3%	27%	0%	0%	38%	0%	62%	0%	7%	0%	0%
Poland	0%	0%	0%	0%	0%	26%	24%	0%	39%	61%	0%	0%	77%
Portugal	0%	0%	0%	8%	0%	75%	9%	0%	0%	39%	0%	0%	98%
Romania	0%	0%	4%	0%	0%	8%	8%	18%	0%	0%	0%	1%	81%
Slovenia	0%	0%	12%	0%	0%	73%	4%	0%	40%	69%	0%	0%	81%
Slovakia	0%	0%	42%	0%	0%	21%	0%	17%	31%	28%	0%	0%	94%
Finland	0%	0%	0%	0%	0%	12%	22%	0%	0%	78%	0%	0%	0%
Sweden	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%

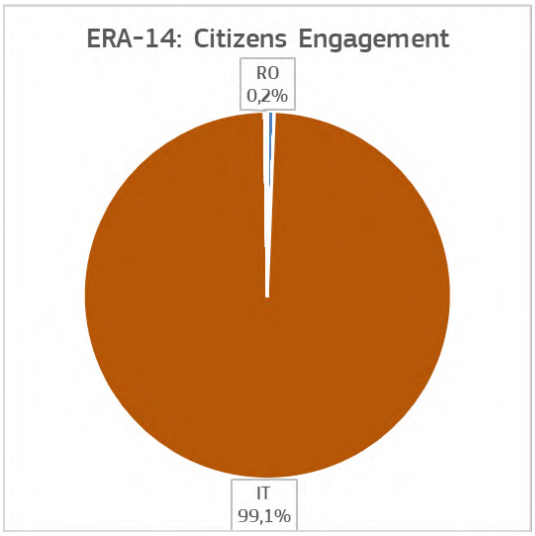
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple ERA actions. Some values are above 100% because our analysis included investments that were not tagged as R&I in FENIX and thus not counted in the total R&I expenditure.

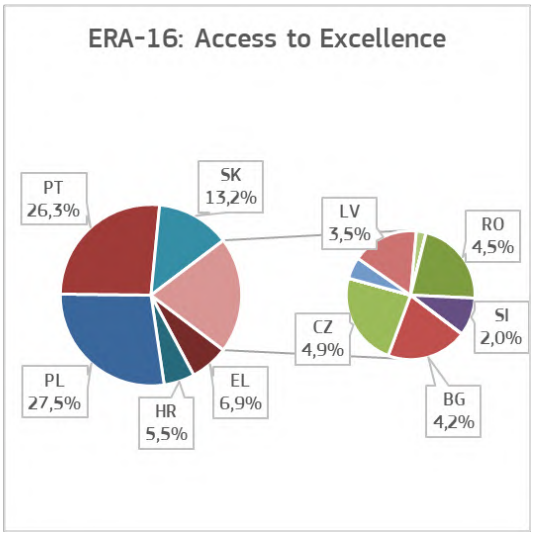
Figures 18: Member States investing in ERA Actions through RRF











Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple ERA actions.

Figure 19: Total number of Reforms in the RRPs per NEIA Flagship

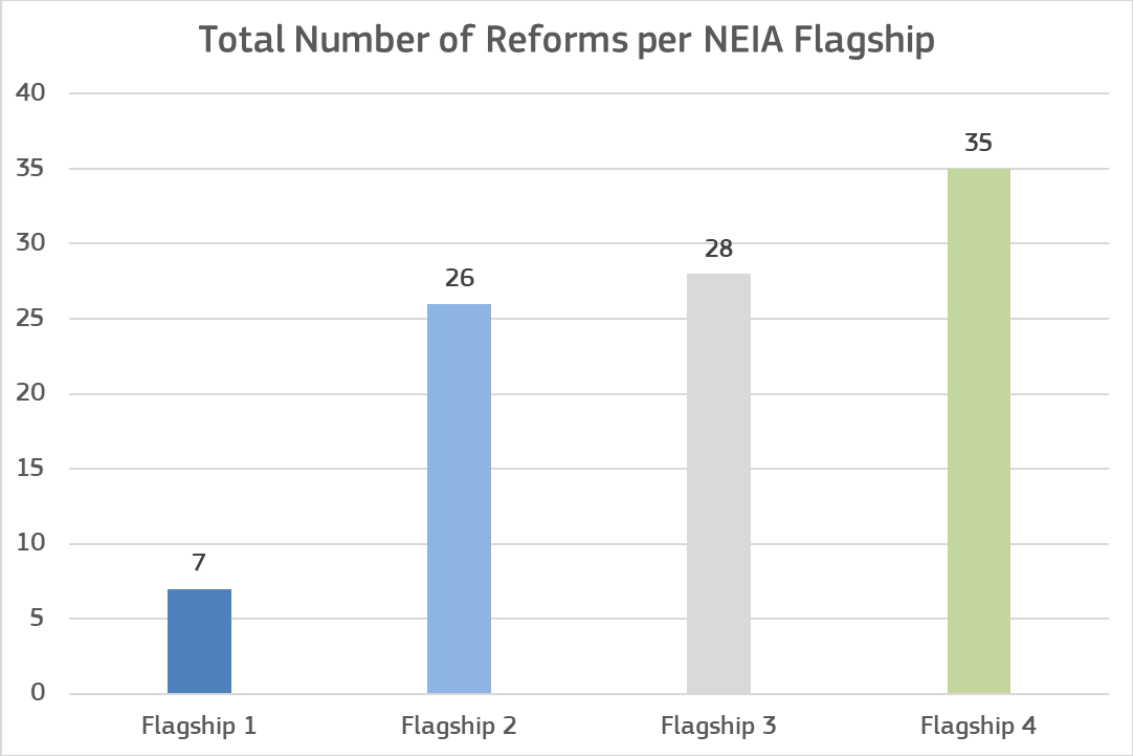
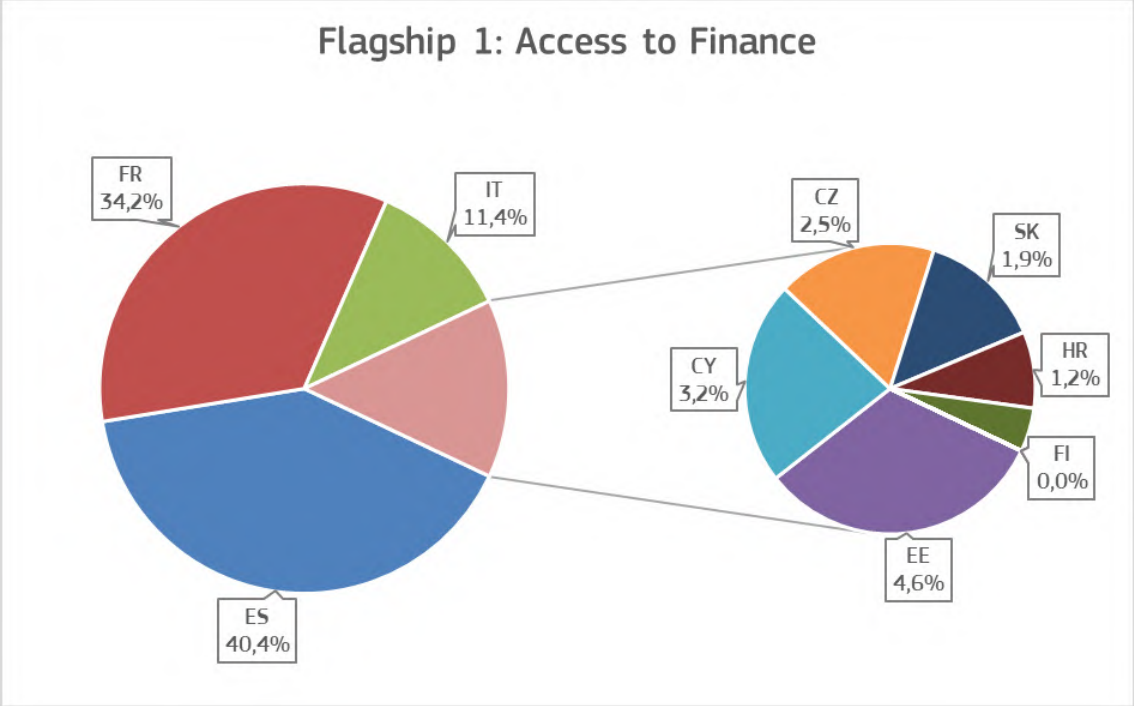
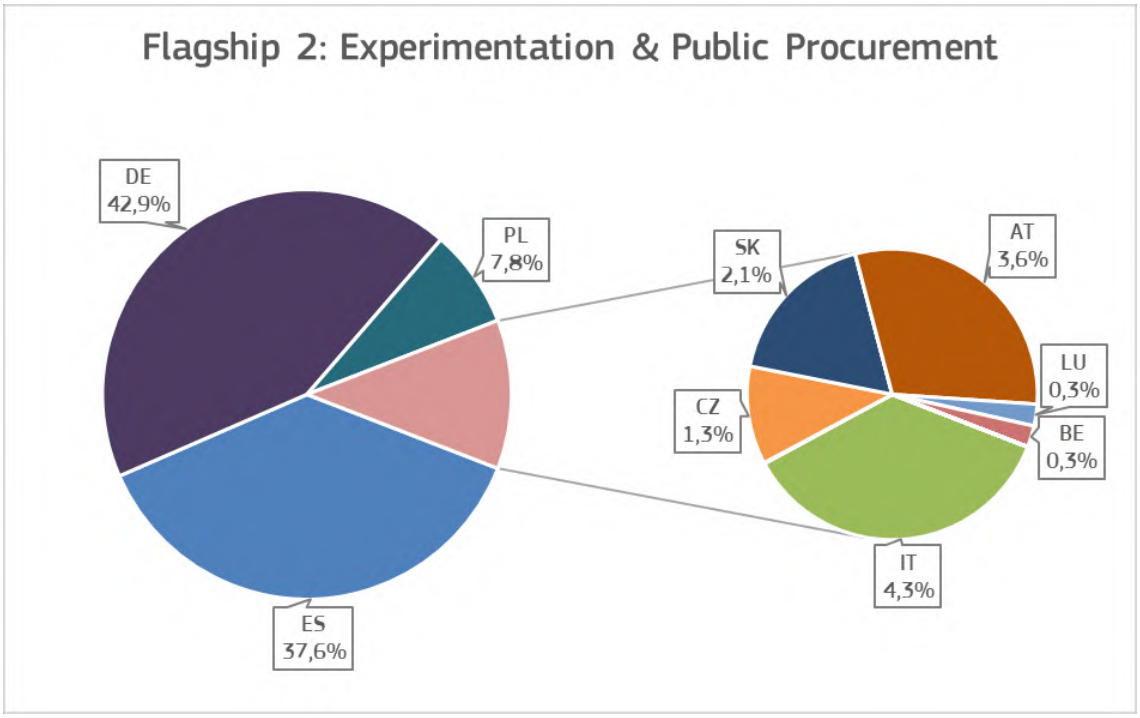
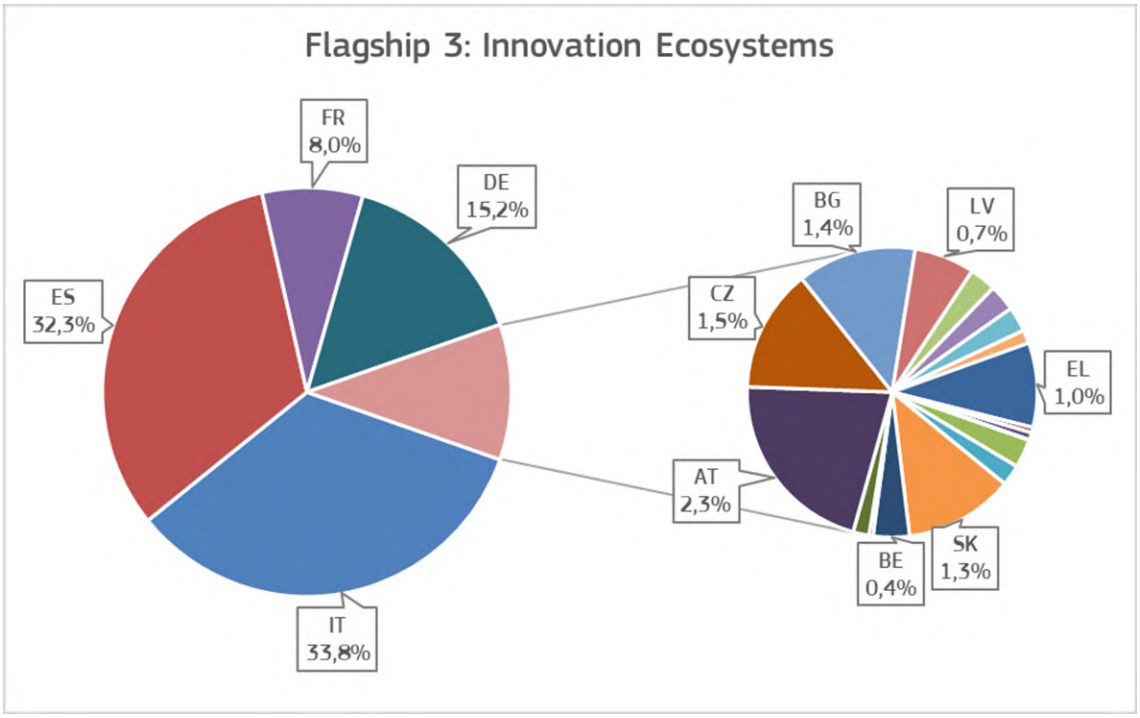
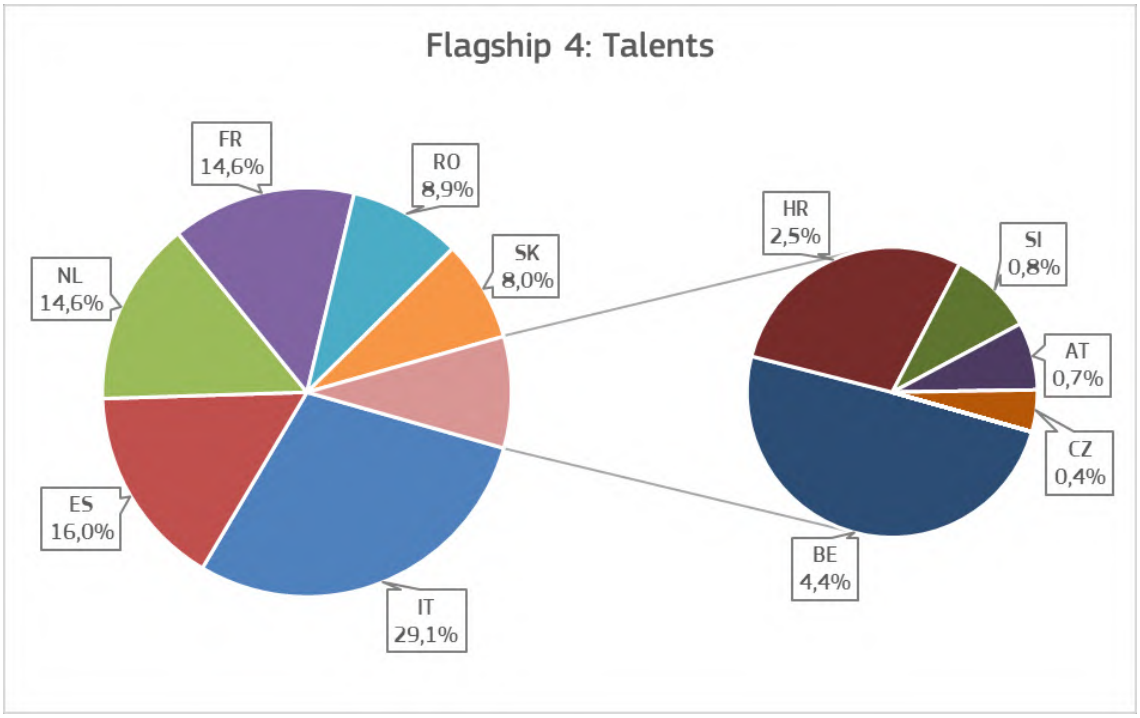


Figure 20: Member States investing in NEIA Flagship through RRF




Flagship 2: Experimentation & Public Procurement
DE 42,9%
PL 7,8%
ES 37,6%
SK 2,1%
AT 3,6%
LU 0,3%
CZ 1,3%
BE 0,3%
IT 4,3%


Flagship 3: Innovation Ecosystems
FR 8,0%
DE 15,2%
ES 32,3%
IT 33,8%
BG 1,4%
LV 0,7%
CZ 1,5%
EL 1,0%
AT 2,3%
SK 1,3%
BE 0,4%



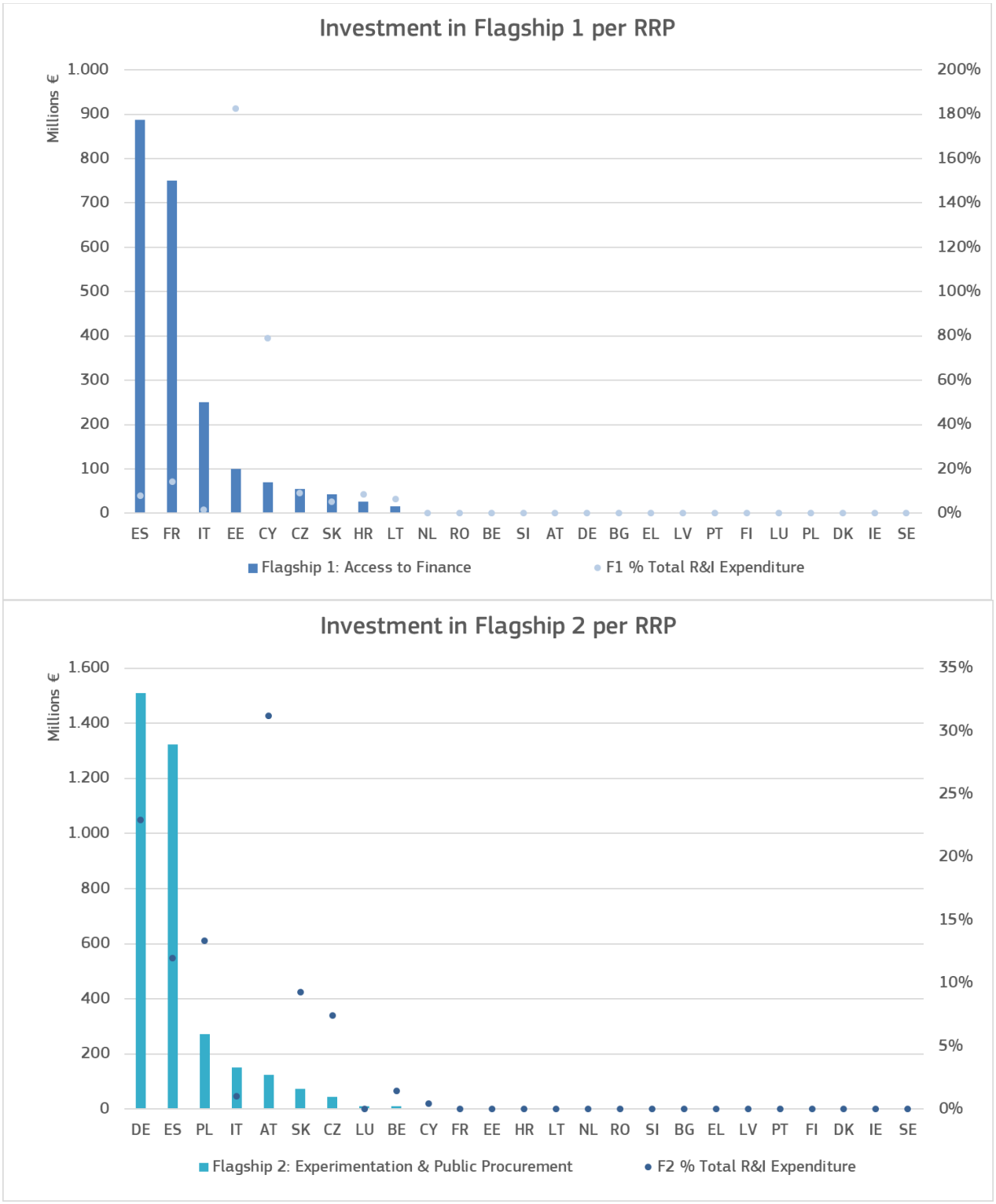
Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the achievement of multiple NEIA Flagship.

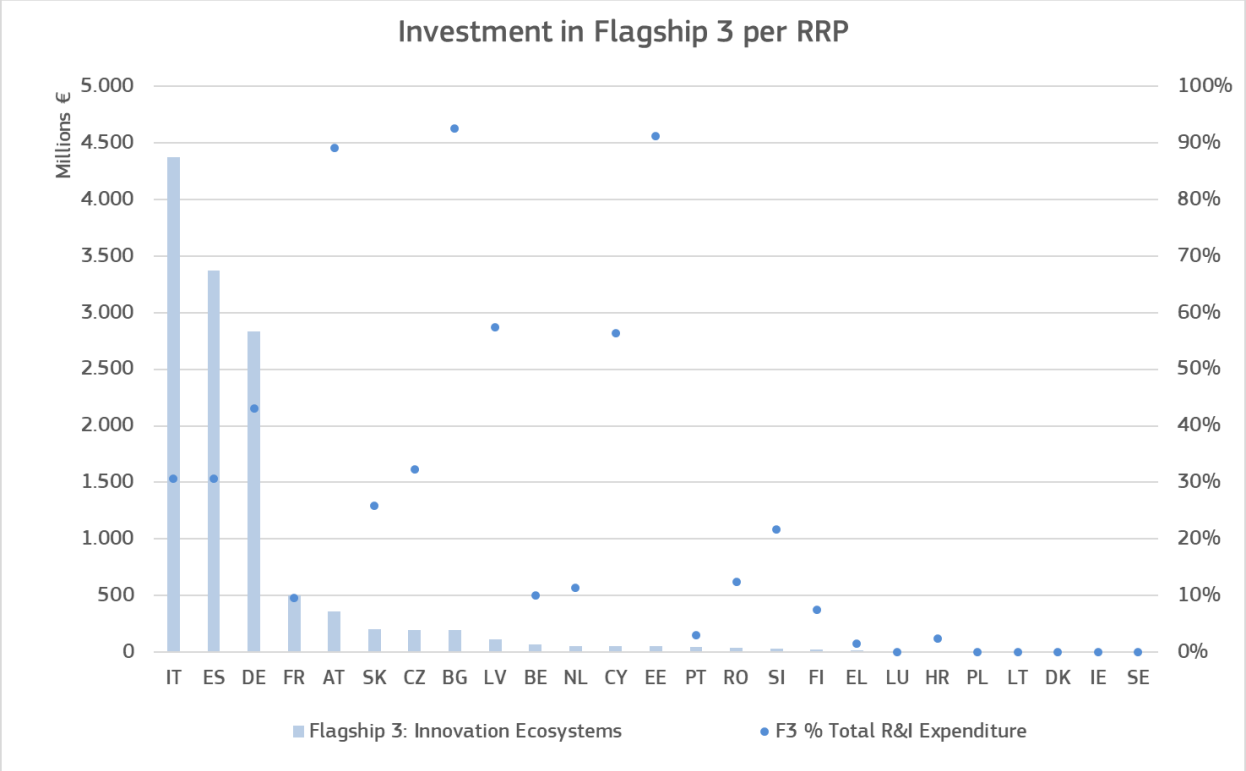
Table 6: R&I Investments per NEIA Flagship as % of total R&I expenditure in each RRP

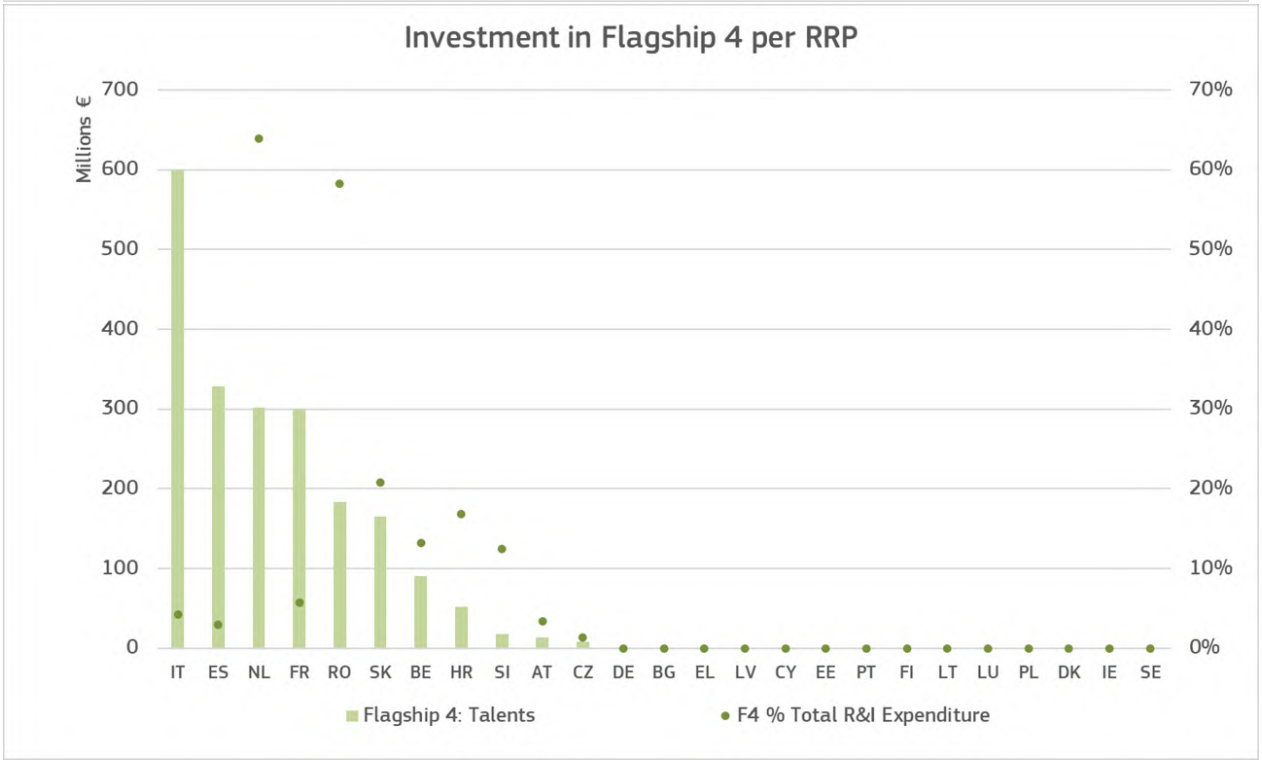
Member State	F1 % Total R&I Expenditure	F2 % Total R&I Expenditure	F3 % Total R&I Expenditure	F4 % Total R&I Expenditure
Beglium	0%	1%	10%	13%
Bulgaria	0%	0%	113%	0%
Czech Republic	9%	7%	48%	1%
Denmark	0%	0%	0%	0%
Germany	0%	23%	36%	0%
Estonia	182%	0%	91%	0%
Ireland	0%	0%	0%	0%
Greece	0%	0%	32%	0%
Spain	8%	12%	46%	3%
France	14%	0%	24%	6%
Croatia	9%	0%	2%	17%
Italy	2%	1%	37%	4%
Cyprus	79%	0%	72%	0%
Latvia	0%	0%	99%	0%
Lithuania	6%	0%	12%	0%
Luxembourg	0%	0%	0%	0%
The Netherlands	0%	0%	11%	64%
Austria	0%	31%	89%	3%
Poland	0%	13%	77%	0%
Portugal	0%	0%	98%	0%
Romania	0%	0%	81%	58%
Slovenia	0%	0%	81%	12%
Slovakia	5%	9%	94%	21%
Finland	0%	0%	7%	0%
Sweden	0%	0%	0%	0%

Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the implementation of multiple NEIA Flagships. Some values are above 100% because our analysis included investments that were not tagged as R&I in FENIX and thus not counted in the total R&I expenditure.

Figure 21: Investment in NEIA Flagships per RRP







Source: European Commission, DG R&I Unit A1 European Semester & Country Intelligence, using FENIX Database. Methodological Note: The data were obtained based on DG RTD own analysis and they imply some degree of double counting due to the fact that the same investment may contribute to the implementation of multiple NEIA Flagships.

Annex 2: Methodology - Interpretation of each EU Objective, ERA Action and innovation flagship in the context of this analysis

1. Contribution of the RRF to key EU objectives

Table 7: Contribution of the RRF to the twin transition, health and territorial cohesion – examples for categorisation

Green transition	**Description**: All measures assigned to the "Green R&D&I" policy area in FENIX
Digital transition	**Description:** All measures assigned to the "Digital R&D&I" policy area in FENIX.
Health	**Description:** Investments targeting R&I in health **Example:** **ES RRP C17:I6** - Support R&I projects to strengthen the strategic capacities and internationalisation of the National Health System, projects related to the precision personalized medicine strategy and contribution to a public – private investment vehicle in advanced therapies
Territorial cohesion	**Description**: Reforms/investments aiming at reducing regional disparities in terms of R&I performance within the MS. Measures targeting enhanced coordination and better governance systems among national-regional bodies. Funds targeting interregional cooperation in R&I. **Example:** **ES RRP C17.I1:** Supplementary Research and Development plans with Autonomous Communities (The objective of this measure is to foster the coordination of the state level with regions in the area of R&D&I through the establishment of supplementary R&D&I plans to be co-financed by the RRF and the regions. This new instrument shall also further collaboration between regions, as they establish common priorities under their respective Regional Smart Specialization Strategies (RIS3)).

2. Contribution of the RRPs to the ERA Policy Agenda

The below table presents, for each ERA Action, the type of RRP measures which has been considered, for the purpose of the analysis, as contributing to that action.

Table 8: Contribution of the RRPs to the ERA Policy Agenda – examples for categorisation

ERA Action	Relevant RRP measures
1. Enable Open Science, including through the European Open Science Cloud (EOSC)	**Description:** Reforms/investments deploying Open Science, interoperability of research data, EOSC services, establishing monitoring mechanism to collect data and benchmark investments, policies, digital research outputs, open science skills and infrastructure capacities related to EOSC **Example:** **ES RRP C21.I5** - Improving university digital

	infrastructure, equipment, technologies, teaching and evaluation (This investment includes a number of measures aimed at improving the technological and digital capacities and skills of universities. These include investment in digital teaching resources and infrastructure such as cloud data storage networks of servers including open science, cyber security, and classroom technologies for online courses; and investments in digital training for academic staff and students)
2. Propose an EU copyright and data legislative framework for research	Not relevant in the context of this analysis (the RRPs do not contain measures targeting EU legislative development)
3. Reform the Assessment System for research, researchers and institutions	**Description:** Reforms/investments targeting the quality evaluation/accreditation frameworks for universities, PROs and scientific staff. **Example:** **ES RRP C17:R3** - Comprehensive reform of the university system (one of its goals is Ensuring the quality of university institutions. A decree law has been adopted setting out academic quality criteria for the creation, recognition, authorization and accreditation of universities)
4. Promote attractive research careers, talent circulation and mobility	**Description:** Reforms/investments: - Promoting mobility and talent circulation - Improved capacities for researchers/postdocs - Reforming scientific careers **Example:** **ES RRP C17:R1** Reform of the Science, Technology and Innovation Law (one of the three key aspects of the Law is the reform of the scientific career) **ES RRP C17.I4** Support to scientific research careers through scholarships and grants (postdoc programs, industrial PhDs etc) **ES RRP C21.I4** Training of teaching and research staff (professional development of university teaching staff)
5. Promote gender equality and foster inclusiveness	**Description:** Reforms/investments: - Targeting gender balance in R&I management positions and selection committees (Gender Equality Plans and policies) - Gender mainstream in new R&I policies and projects: Promoting a better use of gender evidence for planning policies and programs (gender impact

	assessment) **Example: ES RRP C17:R1** Reform of the Science, Technology and Innovation Law The reform has a gender mainstream approach, including among others the following aspects: - Ensures balanced presence between women and men in committees - Gender mainstream required in any new R&I plan/project - Protection of woman during maternity leave period for contracting/promotion exercises
6. Protect academic freedom in Europe	**Description:** Any measure aiming at safeguarding academic freedom and/or preventing foreign interference, for example through the set-up by HEIs or PROs of specific action plans. **Example:** based on a preliminary screening, no relevant example could be identified.
7. Upgrade EU guidance for a better knowledge valorisation	**Description:** Any measure aimed at fostering knowledge valorisation, including but not limited to: regulatory changes to incentivise academia-business collaboration, support schemes for collaborative (academia-industry) R&I, intersectoral mobility schemes, measures supporting the creation of research-driven spin-offs and start-ups, support to intermediaries and knowledge transfer entities, measures targeting IP management and standardisation. **Example: FR RRP – C6.R1:** one of the three main goals of the Research Programming Law is to strengthen academia-business linkages and notably to make it easier for researchers to create a business and to combine academic work with business activity.
8. Strengthen research infrastructures	**Description:** Any measure aiming at creating, upgrading and/or strengthening research infrastructures. **Example: BE RRP – C5.2- I-5.08:** in the field of nuclear medicine, the RRF will support the establishment of a radioisotope facility at SCK CEN, the Belgian nuclear research center)
9. Promote international cooperation	Not relevant in the context of this analysis (the RRPs do not contain measures targeting cooperation outside of the EU)
10. Make EU research and innovation missions and partnerships key contributors to the ERA	**Description:** Any measure (explicitly) supporting the implementation of EU Missions at national and/or regional level; any measure supporting European Partnerships

	Example: RO RRP – C9- I5.0: set up of five 'centers of competence' to facilitate the implementation of EU missions at national level **EL RRP-C[4,5]-I[16618]**: this investment contains a sub-investment supporting the participation to two European Partnerships (Euro-HPC and Key Digital Technologies) with a total budget of 10 million EUR.
11. An ERA for green energy transformation	**Description:** Any R&I support measure in the field of energy, including all the R&I-related measures contained in the future REPowerEU chapters of the RRPs **Example: FR RRP – C4-I1.S1**: support for innovation projects carried out in the context of the 'acceleration strategy' on decarbonised hydrogen set up under the 'Investments for the Future Programme'
12. Accelerate the green/digital transition of Europe's key industrial ecosystems	**Description:** Any measure supporting industrial R&I in green or digital-related areas, with a particular focus on measures aiming at supporting the development of low-carbon technologies for energy-intensive industries and/or circular industrial technologies, as well as any measure aimed at supporting technology infrastructures**.** **Example: FR RRP-C4-I1.S2:** set up and roll out of the 'decarbonisation of industry' strategy in the context of the Investments for the Future Programme
13. Empower Higher Education Institutions	**Description:** Any measure aimed at strengthening the R&I capacities and/or improving the R&I performance of higher education institutions, including through institutional reforms. **Example: SK RRP – C8.R1, C8.R2, C8.R4, C8.R5**: set of reforms aiming at improving the performance of Slovak universities (introduction of a performance-based funding system, system of periodic scientific performance evaluation, reform of the governance of universities, consolidation of the public science base through mergers of universities)
14. Bring Science closer to citizens	**Description:** Any measure aimed at fostering citizen engagement in R&I[27] and enabling citizens to become co-creators of new research-based solutions.

[27] Citizen engagement is relevant at all stages of R&I: from the identification and conceptualisation of R&I priorities to the testing and piloting, implementation, valorisation and impact assessment of R&I results.

	Example: based on a preliminary screening, no relevant example could be identified.
15. Build-up research and innovation ecosystems to improve excellence and competitiveness	This ERA Action was put on hold for the moment.
16. Improve EU-wide access to excellence	**Description**: Any measure aiming at strengthening the R&I system of a widening country, thereby contributing to bridging the innovation divide. **Example: HR-C[C32]-R[R1]** – reform aiming at enhancing the R&I capacities of the public research sector
17. Enhance public research institutions' strategic capacity	This action did not reach the threshold defined in the Council Conclusions adopted in November 2021.
18. Support the development of EU countries' national processes for the ERA implementation	Not relevant in the context of this analysis (ERA monitoring framework)
19. Establish an ERA monitoring system	Not relevant in the context of this analysis (ERA monitoring framework)
20. Support research and innovation investments and reforms	This action did not reach the threshold defined in the Council Conclusions adopted in November 2021.

3. Contribution of the RRPs to the New European Innovation Agenda

The below table presents, for each of the five flagships of the new European Innovation Agenda, the type of RRP measures which has been considered, for the purpose of the analysis, as contributing to that flagship.

Table 9: Contribution of the RRPs to the New European Innovation Agenda – examples for categorisation

Flagship	Relevant RRP measures
Access to finance	**Description**: Any measure aiming at enhancing access to finance for start-ups and scale ups (venture capital funds, equity, etc.). Any measure promoting gender and diversity in access to finance. **Example**: **SK-C[C9]-I[I6]** - Financial instruments to support innovation: the objective is to invest, through financial intermediaries, in companies with significant technological and innovative potential. The capital investment shall cover an early stage (seed phase) as well as the growth phase (such as venture capital funds).
Framework conditions	**Description**: Any measure aiming at improving and/or simplifying the framework conditions for innovation (regulatory sandboxes; testing and experimentation facilities, e.g. testbeds or living labs; innovation procurement)

	Example: ES-C[C8]-I[R4] Regulatory sandboxes or test-beds in the energy sector: developing regulatory test-beds (sandboxes) in the national regulatory framework, allowing for the introduction of new products or technological solutions, exceptions or regulatory safeguards to help facilitate R&I in the energy sector. **ES-C[C8]-I[I3] -** New business models in the energy transition: investments and support mechanisms aimed at boosting new business models for the transition related to the deployment of energy storage, as well as its second-life management and recycling, demand management, aggregators, flexibility services, data access and sandboxes.
Innovation ecosystems	**Description**: Any measure aiming at strengthening and better connecting regional innovation ecosystems. All cross-border projects, in particular IPCEIs, as well as any measure aimed at strengthening synergies between the different EU funding streams for R&I should be included as well. **Example**: **IT-C[M4C2]-I[I1.5]:** investment aiming at establishing and strengthening of "innovation ecosystems for sustainability", building "territorial leaders of R&D **DE-C[2.1]-I[2]** - IPCEI Microelectronics and Communication Technologies
Deep tech talents	**Description**: Any measure aiming at nurturing, attracting and retaining entrepreneurs and innovators (including training programmes, mobility schemes, etc.), including support to women founders and innovators. **Example: ES-C[13]-R[R2] -** Strategy Spain Entrepreneurial Nation**:** adoption of a start-up law to create a favourable framework for the creation and growth of highly innovative start-ups, and the set-up of a NEXT-TECH public-private fund to scale up start-ups in disruptive technologies. The adoption of the Law shall provide a legal definition of start-ups; identify tax incentives to foster their creation and to attract talents; set out measures to facilitate the attraction of foreign investors and entrepreneurs; and adopt mechanisms to facilitate the implementation of the law and its relationship with the measures related to the digital entrepreneur ecosystem. **ES-C[13]- I[I1] -** Entrepreneurship**.** The objectives of the investment are to boost the entrepreneurial ecosystem to make it more resilient and competitive, addressing the challenges of the green and digital transition through four main actions:1) Strengthening entrepreneurial skills, 2) Provide tools to support business creation and business

	management and to strengthen SMEs, 3) Dissemination and communication campaigns for the creation, development or attraction to Spain of international events focusing on innovative companies and a program to attract women talent, 4) Funding a support line for entrepreneurship and SMEs to support women's entrepreneurship.
Innovation policy-making framework	This flagship is mainly about EU actions and coordination, and therefore less relevant in the context of this analysis of the RRPs.

4. Information of novel innovative policy instruments in the implementation of the RRPs

a. Innovative Public Procurements
b. Innovative Financial instruments

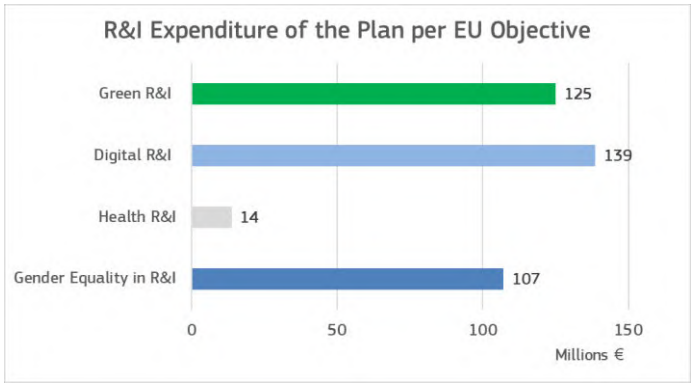
AUSTRIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 0,4 bn (i.e. about 11,76% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Austrian RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the twin transition is key a priority of the Austrian RRP. Together they amount to around 65% of the overall R&I investments of the plan. R&I expenditure towards digital-related R&I areas represents with 34,61% the dimension with the second highest amount of funds in the entire plan.



Investments in R&I for Health represent 3,42% of the overall R&I investments and also investments in gender equality in R&I make out a substantial share of the investment (see also ERA Action 5 in Section 2).

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C3-I3D2:** The investment in the IPCEI Hydrogen aims	EUR 125 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	at building a European hydrogen ecosystem that makes a significant contribution to the achievement of European climate objectives. In addition, the IPCEI Hydrogen aims to support European industry in this transformation in order to secure and develop jobs and value added.	
Digital	• **Investment C3I-I3A3:** The investment goes into disease surveillance and prevention, as well as biomedical research based on Omics and clinical data. Digital infrastructure and its connectivity are of particular importance. A rapid transition of scientific research results to the immediate benefit of patients and economic exploitation will be sought. • **Investment C3-I3D1:** The investment in the IPCEI Microelectronics and Connectivity aims at strengthening microelectronics areas that are already considered to be Europe's strengths and, on the other hand, targeting fields where Europe is currently dependent on imports from other countries. A key objective is therefore to strengthen Europe's strategic autonomy.	EUR 13,7 mln EUR 125 mln
Health	• **Investment C3I-I3A3:** One part of the overall investment goes into biomedical research based on Omics and clinical data and into translational research.	EUR 13,7 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Austrian RRP are expected to contribute significantly to the key actions of the ERA Policy Agenda, in particular to Action 1, 4, 5, 7, 8, 11 and 13. Furthermore, the RRP is expected to contribute to all flagships of the New European Innovation Agenda.

The RRP component on Research & Innovation includes a reform in form of an overarching RTI Strategy 2030 which sets out the strategic direction for the next ten years to (1) catch up with the world's leading field and strengthen the RTI location in Austria, (2) focus on effectiveness and excellence, and (3) focus on knowledge, talent and skills.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 1: European Open Science	• **Investment C3.1-I3A2:** This measure foresees to pool forces within Austria, to strengthen cross-border cooperation and to achieve or expand an alignment with relevant European initiatives and projects	EUR 107 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

Cloud	such as EuroHPC and EuroCC.	
ERA Action 4: Research Careers	• **Investment C3-I3A3:** One objective of the measure is to attract the world's best talents and thus provide a boost to the biomedical environment in Austria and Central Europe. • **Reform C3-R3A1:** The strategy promotes a 20% increase of STEM graduates and an increase of proportion of scientific and research staff recruited from abroad, in particular from universities, to 45%.	EUR 13,7 mln
ERA Action 5: Gender Equality	• **Investment C3-I3A2:** Gender aspects will be taken into consideration in the implementation of the measure. • **Reform C3-R3A2:** The strategy has the objective to increase by 5 % the proportion of women within engineering graduates. Strengthen gender equality and diversity in R&D and enhance the attractiveness and promotion of research careers, particularly for women, by intensifying equal opportunity programmes and measures in human resources and career planning.	EUR 107 mln
ERA Action 7: Knowledge Valorisation	• **Reform C3-R3A2:** Strengthen knowledge valorisation is mentioned in the strategy under objective 2: Focus on effectiveness and excellence.	
ERA Action 8: Research Infrastructures	• **Investment C3-I3A2:** The measure foresees support for research infrastructures, including software development and research cooperation to strengthen the knowledge base for the further development of quantum computing/Quant Sciences. • **Investment C3-I3A3:** The institute has the potential to give innovative boost to the overall entire biomedical environment in Austria and Central Europe. Its digital infrastructure is of particular importance. It could contribute to an e-infrastructure ecosystem in Europe. • **Investment C3-I3A4**: The measure has as objectives to provide high-quality infrastructure at Austrian universities and to provide access to and integration in large-scale international research infrastructures. • **Reform C3-R3A2:** The strategy's objectives are to expand research and technology infrastructure (RTIS) and facilitate access and to support evidence-based planning and long-term competitive financing models for participation in European and international research infrastructures.	EUR 107 mln EUR 13,7 mln EUR 30 mln
ERA Action 11: Energy	• **Investment C3-I3D1:** The SET Plan has in the past helped in supporting IPCEIs. This might continue in the future. • **Investment C3-I3D2**: The SET Plan has in the past helped in supporting IPCEIs. This might continue in the future. This measure can contribute to the hydrogen ERA pilot action.	EUR 125 mln EUR 125 mln
ERA Action 13: Higher Education Institutions	• **Investment C3-I3A4:** One objective of this measure is to set up a high-quality and competitive (digital) research infrastructure in Austrian universities. It can therefore contribute to ensuring that Europe's higher education institutions remain competitive on a worldwide scene.	EUR 30 mln

A New European Innovation Agenda		
Flagship 1: Access to Finance	• **Reform C3-R3A2:** The strategy foresees to expand the venture capital pool (including five corporate venture funds to be established in Austria), to raise venture capital expenditure from 0.02% to 0.1% compared to GDP. Increase the number of commercially successful academic spin-offs by 100 %.	
Flagship 2: Framework conditions	• **Investment C3-I3D2:** The IPCEI could support the development of a vibrant hydrogen economy across the entire value chain and be connected to the test bed of renewable hydrogen. • **Reform C3-R3A2:** The strategy foresees support for innovation through public procurement.	EUR 125 mln
Flagship 3: Innovation ecosystems	• **Investment C3-I3A2:** The measure aims, amongst others, to pool forces within Austria, to strengthen cross-border cooperation (e.g. in the German-speaking area) and to achieve or expand an alignment with relevant European initiatives and projects such as EuroHPC and EuroCC. • **Investment C3-I3D1:** This IPCEI will reinforce the support the EC is already giving to MS in this domain. • **Investment C3-I3D2:** This IPCEI will reinforce the support the EC is already giving to MS in this domain. This measure also contributes to the Hydrogen Valleys as part of the REPowerEU Plan. • **Reform C3-R3A2:** The strategy foresees to consolidate Austria's position in strategically important value creation chains through participation in IPCEIs and to develop model regions and large-format experimental areas.	EUR 107 mln EUR 125 mln EUR 125 mln
Flagship 4: Deep Tech Talents	• **Investment C3-I3A3:** It is one of the Institute's objectives to attract the world's best talents in translational research. • **Reform C3-R3A2:** The strategy focusses, amongst others, on talents and skills. This includes Increase the proportion of graduates in STEM subjects by 20 %, and the proportion of academic and research personnel recruited from abroad to 45 %, particularly at universities.	EUR 13,7 mln

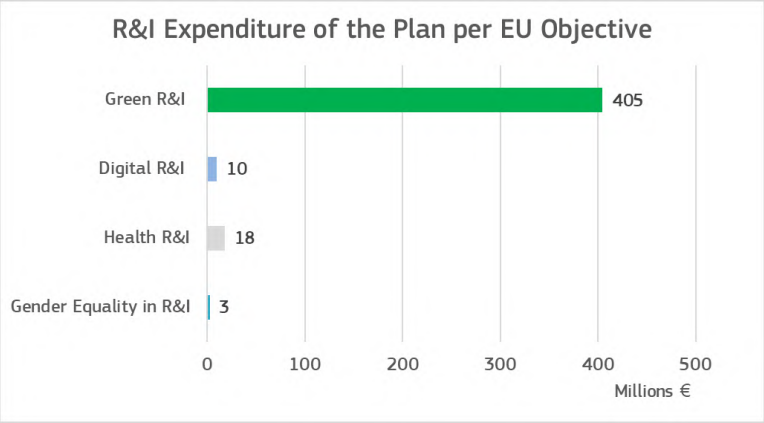
BELGIUM

Estimated amount of RRF funds allocated to R&I[1]: **EUR 682 mln (i.e. about 12% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Belgian RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

Mobilising R&I for the green transition is key a priority of the Belgian RRP. R&I investments in green-related areas represent almost 60% of the total R&I investments of the plan.



While much less prominent, R&I investments related to Health, Digital and Gender Equality are also present in the RRP. Health R&I represents 2,64% of the overall R&I expenditure of the plan, while digital-related and gender-related R&I investments account for less than 2% of total R&I investments.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment I-1.15:** This investment promotes various demonstration projects related to the production and use of hydrogen under the competence of the federal government. The aim is to stimulate innovative projects with high potential to	EUR 50 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.
[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.
[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	accelerate the energy transition, so that they reach maturity and scale up for commercial use. • **Investment I-1.16:** This investment aims at supporting the transition to a sustainable hydrogen industry in Flanders through investment and project financing. The funding supports a portfolio of projects such as Important Project of Common European interest (IPCEI) to develop an industrial value chain towards hydrogen production, transport, storage and related applications. • **Investment I-1.18:** The investment aims at reducing CO2 emission resulting from energy consumption and emissions from industrial processes. It is implemented through a call for R&D partnership projects bringing technologies to the level of (pre)-industrial demonstration or pilot versions in several domains such as electrification of industrial processes, hydrogen production, direct use of hydrogen in industrial applications and decarbonisation of ammonia production processes. • **Investment I-1.19:** This measure consists of investments in a series of large R&D facilities and equipment for the benefit of French-speaking universities willing to establish an interdisciplinary cooperation platform to develop research actions on complex energy systems. • **Investment I-1.24:** The investment includes, among other actions, a research program in agriculture to prepare for longer periods of drought and more frequent heat waves and thus addressing drought problems in a structural way. • **Investment I-5.11:** The investment includes, among other actions, projects related to the green transition in particularly R&D on bioeconomy. • **Investment I-5.15:** This investment aims to accelerate the transition to a circular economy in Belgium. The objective is to support circular projects in industry and research centres to accelerate the transition and scale up in practice. • **Investment I-5.16:** The aim of this investment is to deploy the Walloon circular economy by using R&D projects focused on circularity (reuse, upscaling and recycling) of metals, batteries and minerals for the creation of innovation partnerships.	EUR 47,9 mln EUR 50 mln EUR 26,4 mln EUR 6 mln EUR 130 mln EUR 27,4 mln EUR 67 mln
Digital	• **Investment I-5.09:** Part of the investment provides support through calls for space projects. These projects will cover aspects such as space connectivity, cybersecurity or spatial data management aspects.	EUR 10 mln
Health	• **Investment I-5.08:** The investment aims to ensure an increase in the supply of 177Lu and Mo-99 for cancer treatment considering the growing needs in the EU. • **Investment I-5.11:** This investment aims at boosting innovation of Flanders' economic operators through R&D, with a focus on three areas: digitalisation, sustainability and health. In the field of health R&D projects can relate to the pharmaceutical sector, and to 3D printing technology.	EUR 10 mln EUR 8 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Belgian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda (in particular to Actions 5, 7, 8, 11, 12, and 13) and, albeit to a lesser extent, to two of the flagships of the New European Innovation Agenda, notably Flagships 3 and 4.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 5: Gender Equality	• **Investment I-4.10:** The investment aims at analysing gender inequality on the labour market and promoting the integration of women into the labour market and consists of launching a call for projects focused on the integration of vulnerable women on the labour market.	EUR 2,9 mln
ERA Action 7: Knowledge Valorisation	• **Investment I-2.14:** The investment in AI Research and Innovation Hub supports joining forces between academia, industry, policymakers and citizens to develop AI solutions that are widely accepted. The AI test and Experience Lab is showcasing AI and data driven technologies to create awareness for the general public and industry. • **Investment I-5.11:** The investment focuses on developing cooperation between businesses, research institutions and governments and to launch joint projects in the field of health and digital.	EUR 9,9 mln EUR 8 mln
ERA Action 8: Research Infrastructures	• **Investment I-1.19:** This measure will finance some large R&D facilities and equipment for the benefit of French-speaking universities willing to establish an interdisciplinary cooperation platform to develop research actions on complex energy systems. This collaboration will strengthen the positioning of universities in the European Research Area by enabling them to live up to ambitious opportunities for international collaboration. • **Investment I-5.08:** In the field of nuclear medicine, the RRF will support the creation of a new infrastructure, necessary to ensure an increase in the supply of 177Lu radioisotope at SCK CEN, the Belgian nuclear research center. • **Investment I-5.11:** This measure aims to acquire basic knowledge and facilities for converting knowledge into products and services to focus on research infrastructures of universities and on pilot/demonstration facilities or infrastructure investments by or for businesses.	EUR 26,4 mln EUR 10 mln EUR 100 mln
ERA Action 11: Energy	• **Investment I-1.15:** The aim is to stimulate innovative projects with high potential to accelerate the energy transition, so that they reach maturity and scale up for	EUR 50 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	commercial use. The projects cover demonstration plants for green and low-carbon hydrogen production as well as the use of hydrogen. • **Investment I-1.16:** This investment supports a portfolio of projects that aim at developing an industrial value chain towards hydrogen production, transport, storage and related applications. The projects will also allow the development of a new product and/or the development of a new production process. • **Investment I-1.18:** The measure aims at reducing CO2 emissions resulting from energy consumption and industrial processes. It will be implemented through a call for R&D projects aimed at bringing technologies to the level of (pre)-industrial demonstration or pilot versions in the following areas: electrification of industrial processes, hydrogen production by electrolysis or methane pyrolysis, direct use of hydrogen in industrial applications, capture and concentration of CO2 emissions, decarbonisation of ammonia production processes. • **Investment I-1.19:** This measure consists of investments in a series of large R&D facilities and equipment for the benefit of French-speaking universities willing to establish an interdisciplinary research cooperation platform on complex energy systems. The targeted technologies are: renewable and low carbon energy production; conversion and storage; CO2 capture and valorisation; rational use of energy in buildings and mobility; electricity grid operation.	EUR 75,3 mln EUR 50 mln EUR 26,4 mln
ERA Action 12: Green & Digital	• **Investment I-1.15:** The aim of this measure is to stimulate innovative projects with high potential to accelerate the energy transition, to reach maturity and scale up for commercial use. The projects cover demonstration plants for green and low-carbon hydrogen production. • **Investment I-1.16:** This investment supports a portfolio of projects aimed at developing an industrial value chain for hydrogen production, transport, storage and related applications. The projects will also allow the development of a new product and/or the development of a new production process. • **Investment I-1.18:** The measure aims at reducing CO2 emissions resulting from energy consumption and industrial processes. It is implemented through a call for R&D projects aimed at bringing technologies to the level of (pre)-industrial demonstration or pilot versions in the following areas: electrification of industrial processes, hydrogen production by electrolysis or methane pyrolysis, direct use of hydrogen in industrial applications, capture and concentration of CO2 emissions, decarbonisation of ammonia production processes. • **Investment I-1.24:** The Blue Deal investment aims for better preparedness for longer periods of drought and more frequent heat waves by addressing drought problems in a structural way. • **Investment I-5.09:** This investment aims to support aeronautics and space companies through an ambitious	EUR 50 mln EUR 75,3 mln EUR 50 mln EUR 6 mln EUR 35 mln EUR 25 mln

	R&D&I policy, to improve their competitiveness and enable them to participate in the development of advanced and sustainable technologies (e.g. clean aviation). • **Investment I-5.10:** The aim of this investment is to minimise the amount of non-nuclear waste that might be produced during the eventual decommissioning of the Belgian nuclear power plants. The project is focused only re-use and recycling and final disposal non-nuclear waste (e.g. metals and concrete). • **Investment I-5.11:** The programme is the Flemish research agenda for the bioeconomy. It aims at strengthening the R&I capacities of Flemish universities in the field of bioeconomy and green transition. • **Investment I-5.15:** This investment aims to accelerate the transition to a circular economy by using design for scarcity, reuse, repair and recycling, chemical safety, verification and certification of recycled content. • **Investment I-5.16:** The aim of this investment is to enable the organisation and enhancement of eco-design, eco-innovation and the selective collection/sorting of material flows in order to ensure reuse, promote preparation for reuse and recycling.	EUR 144 mln EUR 27,4 mln EUR 84 mln
ERA Action 13: Higher Education Institutions	• **Investment I-5.11:** The programme is the Flemish research agenda for the bioeconomy. It is implemented through fundamental research projects and aims at strengthening the R&I capacities of Flemish universities in the field of bioeconomy. • **Investment I-1.19:** This measure will finance large R&D facilities and equipment for the benefit of French-speaking universities willing to establish an interdisciplinary cooperation platform to develop research actions on complex energy systems. This collaboration will allow to bring together the research forces of the universities within this platform in order to achieve critical mass and strengthen their positioning in the European Research Area.	EUR 20 mln EUR 26,4 mln
ERA Action 14: Citizen engagement	• **Investment I-2.14:** This measure concerns the set-up of an AI institute, the 'AI for the Common Good Institute Brussels (FARI)', comprising: (1) the AI Research and Innovation Hub: joining forces between academia, industry, policy-makers and citizens to develop AI solutions that are widely accepted, (2) the AI & Society Think Tank: reflecting on and positioning of AI in society; and (3) the AI test and Experience Lab: showcasing AI and data driven technologies to create awareness for the general public and industry.	EUR 9,9 mln
A New European Innovation Agenda		
Flagship 2: Experimentation and public procurement	• **Investment I-2.14:** This measure concerns the set-up of an AI institute, the 'AI for the Common Good Institute Brussels (FARI)', comprising: (1) the 'AI Research and Innovation Hub': joining forces between academia, industry, policy-makers and citizens to develop AI solutions that are widely accepted, (2)	EUR 9,9 mln

	the 'AI & Society Think Tank': reflecting on and positioning of AI in society; and (3) the 'AI test and Experience Lab': showcasing AI and data driven technologies to create awareness for the general public and industry.	
Flagship 3: Innovation ecosystems	• **Investment I-1.16:** The funding supports a portfolio of projects such as Important Projects of Common European interest (IPCEI) that aim at developing an industrial value chain towards hydrogen production, transport, storage and related applications. • **Investment I-5.11:** This investment provides resource to support Flemish companies wishing to participate in the microelectronics IPCEI.	EUR 47,9 mln EUR 20 mln
Flagship 4 Deep Tech Talents	• **Investment I-2.14:** This measure concerns the set-up of an AI institute, the 'AI for the Common Good Institute Brussels (FARI)', comprising: (1) the 'AI Research and Innovation Hub': (2) the 'AI & Society Think Tank'; and (3) the 'AI test and Experience Lab': showcasing AI and data driven technologies to create awareness for the general public and industry, including a training dimension. • **Investment I-5.11:** Part of this investment is dedicated to support to SMEs and young entrepreneurs. The objective is to support 180 additional business innovation projects of which at least 50% are carried out by SMEs.	EUR 9,9 mln EUR 80 mln

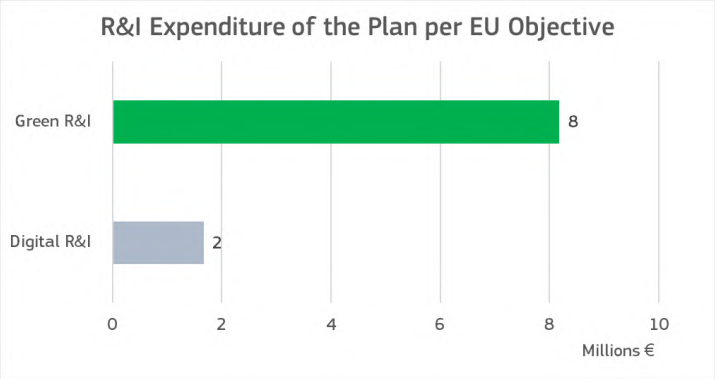
BULGARIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 211,3 mln (i.e. about 3% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Bulgarian RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Bulgarian RRP contains measures aiming at mobilising R&I for the twin transition. Investments in green R&I represent 3,87% of the overall R&I investments of the plan, while 0,8% of the total R&I investments of the plan are directed towards digital-related R&I areas.



R&I measures targeting territorial cohesion, gender equality and health are not directly part of the Bulgarian plan.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment BG-C[C2]-I[I2.d]:** The investment foresees implementation of research and innovation processes, technology transfer and cooperation between enterprises focusing on the low carbon economy, resilience and adaptation to climate change.	EUR 8,2 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

Digital	• **Investment BG-C[C2]-I[I2.e]:** This investment aims at enhancing the innovation capacity of the Bulgarian Academy of Sciences, including through the modernisation of its physical and digital infrastructures and dedicated trainings.	EUR 1,67 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Bulgarian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, and, albeit to a lesser extent, to some of the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 3: Research assessment	• **Reform BG-C[C1]-R[R2]:** The Higher Education Act will include an updated system of accreditation of higher education institutions.	
ERA Action 4: Researchers and careers	• **Investment BG-C[C2]-I[I1.b]:** The investments aims to set up a network of higher education institutions to prepare highly skilled researchers, with the Strategic Research and Innovation Agenda for Development (SRED), improving career conditions and attractiveness. • **Investment BG-C[C2]-I[I2.e]:** The investment will boost the research potential of the Bulgarian Academy of Sciences by upgrading innovation skills and qualifications and promoting an interdisciplinary, cross-sectoral and cross-national approach. • **Reform BG-C[C1]-R[R2]:** The Higher Education Act will rejuvenate the teaching staff and attract and retain young scientists, increasing the quality of teaching and increasing the demands on students.	EUR 214,7 mln EUR 1,67 mln
ERA Action 7: Knowledge valorisation	• **Investment BG-C[C2]-I[I1]:** The investment will contribute to research HEIs developing research development plans for technology transfer and collaborating with industry and support to start-ups. • **Investment BG-C[C2]-I[I2.d]:** The investment creates institutional structures and tools to effectively link the Academy of Sciences to businesses to accelerate the application of innovation in the economy and its transformation into a knowledge economy. • **Reform BG-C[C1]-R[R2]:** The National Map of Higher	EUR 214,7 mln EUR 8,2 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	education will determine the profile and territorial structure of higher education by professional fields from the regulated professions in accordance with socio-economic development and the needs of the labor market. • **Reform BG-C[C2]-R[R1]:** The Research and Innovation Act will regulate technology transfer activities and intellectual property rights.	
ERA Action 12: Green & Digital	• **Investment BG-C[C2]-I[I2.b]:** The investment aims at building a single EU quantum communication system as part of the EuroQCI initiative, allowing timely involvement of national telecom operators in the single European QCI network. • **Investment BG-C[C2]-I[I1.b]:** The investment includes support for research and innovation processes, technology transfer and cooperation between enterprises focusing on the low carbon economy, resilience and adaptation to climate change.	EUR 0,5 mln EUR 8,2 mln
ERA Action 13: Universities	• **Investment BG-C[C2]-I[I1.b]:** The established network of higher education institutions will comprise up to 9 higher education institutions (HEIs) and aims to develop a model and encourage more HEIs to stimulate research, not only to improve the quality of education and training but also to provide innovative developments to industry, in particular SMEs. • **Reform BG-C[C1]-R[R2]:** The action plan of the Strategy for the Development of Higher Education 2021-2030 will foster access to quality higher education and increase the labour market relevance of higher education and promote research, including the development of international research networks.	EUR 214,7 mln
ERA Action 16: Access to Excellence	• **Investment BG-C[C2]-I[I1]:** The investment will support 38 Seal of Excellence projects carried out by innovative SMEs, 10 Twinning projects, and two ERA Chairs. • **Investment BG-C[C2]-I[I2.a]:** This investment aims at enhancing the innovation capacity of the Bulgarian Academy of Sciences, including through the development of quality optical internet connectivity with 5G capabilities for big data exchange and rehabilitation of infrastructures linked to applied research and innovation in digital technologies. • **Investment BG-C[C2]-I[I2.b]:** This investment aims at enhancing the innovation capacity of the Bulgarian Academy of Sciences through a wide range of measures, including the set-up of a quantum platform. • **Investment BG-C[C2]-I[I2.c]:** This investment aims at enhancing the innovation capacity of the Bulgarian Academy of Sciences through the reconstruction and modernisation of buildings into functional applied research infrastructures and the rehabilitation of infrastructures in sites for applied research and innovation in green and digital technologies.	EUR 214,7 mln EUR 2,6 mln EUR 0,5 mln EUR 11 mln EUR 8,2 mln

	• **Investment BG-C[C2]-I[I2.d]:** The investment creates institutional structures and tools to effectively link the Academy of Sciences to businesses to accelerate the application of innovation in the economy and its transformation into a knowledge economy. • **Investment BG-C[C2]-I[I2.e]:** This investment aims at enhancing the innovation capacity of the Bulgarian Academy of Sciences through a wide range of measures, including trainings. • **Reform BG-C[C1]-R[R2]:** The reform aims at improving the profile and territorial structure of higher education in the country by professional fields and specialties from the regulated professions in accordance with socio-economic development and the needs of the labor market. • **Reform BG-C[C2]-R[R1]:** The reform through the Research and Innovation Act will regulate the role and responsibilities of each of the institutions involved in the process of policy design, implementation, monitoring and evaluation in the field of R&I.	EUR 1,67 mln
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Reform BG-C[C10]-R[R11]:** The reform aims to foster the development of the high-tech sector by improving access to capital and talent, including procedures and requirements for issuing a visa for start-up entrepreneurs.	
Flagship 3: Innovation ecosystems	• **Investment BG-C[C2]-I[I1.b]:** The network of higher education institutions will seek short- and long-term partnerships between academia and industry, from technology transfer to addressing global and regional technological and social challenges.. • **Investment BG-C[C2]-I[I2.d]:** The investment will boost development of innovative solutions by scientists in response to specific business defined topics related to the green transition and digital technologies. • **Reform BG-C[C1]-R[R2]:** The National Map of Higher education will determine the profile and territorial structure of higher education in the country by professional fields and specialties from the regulated professions in accordance with socio-economic development and the needs of the labor market. • **Reform BG-C[C2]-R[R1]:** The reform aims to foster an efficient policy coordination in all phases of research and innovation and to spur the Bulgarian innovation outcome. This will be done through the creation of a research and innovation ecosystem that ensures close links between academia and the business sectors. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant vis-à-vis this Flagship.*	EUR 214,7 mln EUR 8,2 mln

CYPRUS

Estimated amount of RRF funds allocated to R&I[1]: **EUR 88,6 mln (i.e. about 7% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Cypriot RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

Mobilising R&I for the green transition is a key priority of the Cypriot RRP. Investments in green R&I represent 13,8% of the overall R&I investments of the plan. No direct investments from the RRP are planned for R&I linked to digital, health, cohesion and gender equality.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment CY-C[C3.2]-I[I2.1]:** The funding programmes will promote business clustering, focusing on the low carbon economy, resilience and adaptation to climate change.	EUR 2 mln
	• **Investment CY-C[C3.2]-I[I3]:** It targets at least 10 enterprises supported by grants on green transition R&I activities.	EUR 6 mln
	• **Investment CY-C[C2.1]-I[I8]:** The main investment is the establishment of the infrastructure for monitoring non-CO2 GHG in the main experimental stations of the Agricultural Research Institute and the establishment of an automobile GHG monitoring facility and the peripheral lab infrastructures of the facility.	EUR 4.1 mln
	• **Investment CY-C[C3.1]-I[I4]:** This measure aims at supporting the set-up of an eco-industrial science park which will specialise in manufacturing tech equipment focusing on renewable energy, agri-tech solutions and ICT.	EUR 0,1 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.
[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.
[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Cypriot RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, as well as to the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 7: Knowledge valorisation	• **Investment CY-C[C3.2]-I[I1]:** The investment targets at least 30 completed cases of knowledge transfer services provided by the central Knowledge Transfer Office to universities and other research organisations or enterprises. • **Investment CY-C[C3.2]-I[I2.2]:** These funding programs will facilitate commercialisation of research results and can deliver closer-to-market outputs and outcomes, allowing for shorter-term economic effects. • **Investment CY-C[C3.2]-I[I3]:** The supported projects shall focus on renewable energy, energy efficiency and sustainable transport, and facilitate the commercialisation of research results. • **Investment CY-C[C3.2]-I[I4]:** The investment targets at least 16 enterprises funded for performing R&D activities on dual technologies. • **Reform CY-C[C3.2]-R[R2]:** This reform includes an adoption of measures and incentives to enhance the collaboration of Research Performing Organisations with business and spin-offs.	EUR 3 mln EUR 50 mln EUR 6 mln EUR 3 mln
ERA Action 8: Research infrastructures	• **Reform CY-C[C3.2]-R[R3]:** This reform aims at developing a digital registry on research infrastructures that shall facilitate the request of access of interested parties to such infrastructures.	
ERA Action 11: Energy	• **Investment CY-C[C2.1]-I[I8]:** The main investment is the establishment of an infrastructure for monitoring non-CO2 GHG in the main experimental stations of the Agricultural Research Institute and the establishment of an automobile GHG monitoring facility and the peripheral lab infrastructures of the facility.	EUR 4,1 mln
ERA Action 12: Green & Digital	• **Investment CY-C[C3.1]-I[I4]:** It aims at the adoption of an Action Plan for the establishment of the Eco-Industrial park, which will specialise in manufacturing tech equipment focusing on renewable energy, agri-tech solutions and ICT. • **Investment CY-C[C3.2]-I[I2.1]:** The funding programmes	EUR 0,1 mln EUR 2 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	will promote business clustering, focusing on the low carbon economy, resilience and adaptation to climate change. • **Investment CY-C[C3.2]-I[I3]:** This investment targets at least 10 enterprises supported by grants on green transition R&I activities.	EUR 6 mln
ERA Action 16: Access to Excellence	• **Investment CY-C[C3.2]-I[I1]:** This investment targets at least 30 completed cases of knowledge transfer services provided by the central Knowledge Transfer Office to universities, other research organisations or enterprises. • **Investment CY-C[C3.2]-I[I2.1]:** The funding programmes will promote business clustering, focusing on the low carbon economy, resilience and adaptation to climate change. • **Investment CY-C[C3.2]-I[I2.2]:** The investment is expected to provide funding through Innovation Programs improving the ability of innovative SMEs and startups to access funds and contribute to the overall increase of R&D investment. • **Investment CY-C[C3.2]-I[I3]:** This investment targets at least 10 enterprises supported by grants on green transition R&I activities. • **Investment CY-C[C3.2]-I[I4]:** The investment is expected to increase Research and Innovation by the private sector in the specific area. • **Reform CY-C[C3.2]-R[R1]:** The reform aims at the establishment of a mechanism for impact driven monitoring and support of the 6 Centers of Excellence. • **Reform CY-C[C3.2]-R[R2]:** This reform aims at attracting foreign talents and strengthening human capital for R&I through instruments such as the Scientific VISA scheme for researchers or the Startup VISA scheme for founders of innovative enterprises. • **Reform CY-C[C3.2]-R[R3]:** This reform foresees the adoption of measures and incentives to enhance the collaboration of Research Performing Organisations with business and spin-offs.	EUR 3 mln EUR 2 mln EUR 50 mln EUR 6 mln EUR 3 mln
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Reform CY-C[C3.2]-R[R2]:** This reform foresees the entry into force a law establishing the tax exemption of corporate investors (legal entities) for investing in innovative companies. • **Investment CY-C[C3.2]-I[I2.2]:** This measure includes innovation programs (e.g., Fast-Track Innovation, Pre-Seed, Seed) aimed at improving access to funds for innovative SMEs and startups. • **Investment CY-C[C3.3]-I[I6]:** The fund shall increase the availability of alternative financing sources, particularly for innovative companies and start-ups.	EUR 50 mln EUR 20 mln
Flagship 2: Experimentation & Public procurement	• **Investment CY-C[C3.3]-I[I2]:** This investment includes the launch of a regulatory sandbox to facilitate the development of a suitable and attractive regulatory regime on FinTech and innovative technologies.	EUR 0,4 mln

Flagship 3: Innovation ecosystems	• **Investment CY-C[C3.2]-I[I2.2]:** This investment aims at supporting at least 70 organisations to carry out R&I-related activities such as industrial research, experimental research innovation activities, start-up activities, knowledge transfer activities, including management and protection of intellectual property, for building knowledge transfer capacity and for commercialising research results. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 50 mln
Flagship 4: Talents	• **Reform CY-C[C3.2]-R[R2]:** The reform will review and promote current incentive schemes aimed at attracting foreign talents, such as the Scientific VISA scheme for researchers and their families or the Startup VISA scheme for founders of innovative enterprises.	

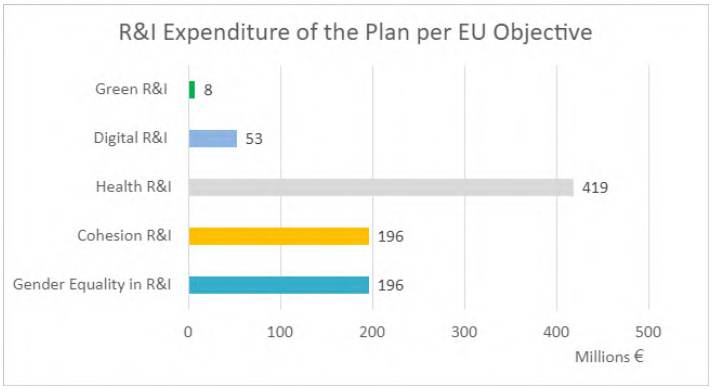
CZECHIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 609 mln (i.e. about 9% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Czech RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

Mobilising R&I for the health sector is a key priority of the Czech RRP. Nearly 70% of the overall R&I expenditure of the plan is dedicated to this sector. Digital-related R&I areas represent 8,7%, while green R&I covers only 1,3% of the overall R&I expenditure.



Territorial cohesion also represents an important dimension of the plan. In the field of R&I, support is notably foreseen to help reinforce health related research ecosystems and cooperation also at regional levels.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C5.2.I3:** This investment contains aid for R&D in the environmental field. The sponsored RDI projects shall focus on thematic areas such as protection and sustainable use of natural resources, climate protection and improvement of air quality, waste management and reuse, protection of nature and landscape.	EUR 7,9 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.
[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.
[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

Digital	• **Reform C1.4.R2:** This measure aims at supporting technology infrastructures. The establishment of certification authorities with testing capacities for certification including laboratories, equipment and know-how to support innovation in strategic sectors is planned. • **Investment C1.4.I1:** The investment supports the European Centre of Excellence in AI "for Citizens' Safety and Security" which should ensure sufficient research capacity to enable the introduction and application of AI technologies. • **Investment C1.4.I13:** This investment aims at supporting R&I in the aviation industry to enable the use of digital twin modelling and simulations, which shall lead to the development of high accuracy production methods.	EUR 4,3 mln EUR 9,4 mln EUR 39,3 mln
Health	• **Investment C5.1.I1:** This investment aims at supporting at least four research consortia aimed at improving a systematic provision of expertise in one of the selected health disciplines. • **Investment C6.2.I1:** The investment focuses on building the Czech Oncology Institute in Prague with the aim to provide cancer prevention, diagnosis and treatment modalities, in one single point-of-care.	EUR 196,4 mln EUR 222,3 mln
Territorial Cohesion	• **Investment C5.1.I1:** One of the subobjectives of the programme 'Exceles' is to strengthen interinstitutional, interdisciplinary and interregional cooperation in R&D&I priority areas and the quality of national research, including by further increasing international cooperation.	EUR 196,4 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Czech RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, in particular to Actions 8, 12 and 16 as well as to four flagships of the New European Innovation Agenda., notably Flagships 2 and 3.

The Czech Plan puts special attention to strengthening of health-related R&I capacities as well as promoting stronger public-private collaboration.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 4: Researchers and careers	• **Investment C5.I1**: The investment aims at improving the capacities of the consortium's researchers through upskilling activities. One of activities which can be supported under the programme 'Exceles' is the "development of human resources, including the involvement of the younger generation, and the development of quality working conditions".	EUR 196,4 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

ERA Action 5 Gender equality	• **Investment C5.I1:** One of activities which can be supported under the program Exceles is gender mainstreaming in research. This includes supporting activities related to the development of knowledge content in R&D&I priority areas from a gender perspective or human resources development, taking into account gender-specific needs.	EUR 196,4 mln
ERA Action 7: Knowledge valorisation	• **Investment C5.2.I2**: The measure aims at supporting industrial research projects by providing support for cooperation between research organisations and enterprises, especially SMEs, under the National Centres of Competence programme.	EUR 58,9 mln
ERA Action 8:	• **Reform C6.2.R1:** The Plan 2030 (NOPL) plans to promote research and international cooperation in oncology and foresees cooperation within European research infrastructures (e.g., The European Cancer Research Infrastructure, BBMRI-ERIC, ECRIN, EATRIS, ELIXIR). • **Investment C5.1.I1:** The investment is expected to include supporting basic and applied research activities, equipping research entities with scientific infrastructure of high quality, and establishing a single scientific platform for each supported priority area. • **Investment C1.4. I13:** This investment consists of the creation of the infrastructure for a fully digitalised testbed for the aviation industry, including the use of quantum computing technology. • **Investment C6.2.I1:** The investment shall include the construction of a new building and acquisition of equipment (including clinical equipment, information and communications technology equipment and safety equipment).	EUR 196,4 mln EUR 39,3 mln EUR 222,3 mln
ERA Action 10 Missions & Partnerships	• **Investment C5.2.I4:** The measure aims at funding Seal of Excellence projects, in particular the instruments of the European Innovation Council Accelerator, which supports SMEs with the highest potential for rapid growth, as well as supporting European Research Area NET Cofunds. • **Investment C1.4.I5[7]:** The planned investment in the European Blockchain Services Infrastructure (EBSI) falls under the umbrella of the European Blockchain Partnership (EBP) and is expected to be co-financed by the Digital Europe Programme. The measure shall support the implementation of an EBSI/EBP use case focused on creation of pan-European (Distributed Ledger Technology) DLT bond platform for SME debt financing.	EUR 19,6 mln EUR 8,8 mln
ERA Action 12: Green & Digital	• **Reform C1.4. R2:** The measure aims at supporting technology infrastructures and the establishment of certification authorities with testing capacities for certification including laboratories, equipment and know-how to support the development and innovation in strategic sectors. • **Investment C1.3.I4:** It focuses on the use of 5G applications in industry and services, mainly the exploitation of new	EUR 4,3 mln EUR 11,8 mln

[7] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis.

	technologies in production processes in the automotive industry. • **Investment C1.4.I1:** The center aims to ensure sufficient research capacity to enable the introduction and application of AI technologies in the designated area. It shall focus its operation on safety-enhancing applications of AI. • **Investment C1.4.I13:** It aims at enabling the use of digital twin modelling and simulations, which shall lead to the development of high accuracy production methods, better data collection and know-how spillovers to other industries. It also includes the completion of the engine core test bed. • **Investment C5.2.I3:** The sponsored RDI projects shall focus on priority thematic areas such as protection and sustainable use of natural resources, climate protection and improvement of air quality, waste management and reuse, protection of nature and landscape or a safe and resilient environment. • **Investment C1.4 I9[8]:** The measure will pilot three funds which shall invest, respectively, in early-stage projects and technology start-up companies in strategic technologies such as AI, blockchain, FinTech, 5G applications; and in projects of research organisations and universities to transfer and commercialise their research results in business practice**.** • **Investment C1.4 I11[9]:** This measure shall consist of the launch and initial operation of two regulatory sandboxes, one in the field of artificial intelligence and one in fintech. Those shall be established in cooperation with the relevant authorities, regulators and partners of the respective sector and shall aim at providing an adequate technical and technological environment for testing new technologies.	EUR 9,4 mln EUR 39,3 mln EUR 7,9 mln EUR 55 mln EUR 5,9 mln
ERA Action 16	• **Reform C5.2.R1:** New National Coordination Group for Support for Industrial Research shall harmonise conditions for granting support as regards industrial research providing better support to innovative enterprises. • **Reform C6.2.R1:** The National plan supports excellence in research and development, including academic research and academic clinical trials to improve the diagnostic and therapeutic process in oncology, this measure has thus potential to contribute to the enhancement of the R&I capacities of the public research sector in this domain. • **Investment C1.3.I4:** This investment aims at supporting research activities related to the development of 5G networks and services, support available for public and private entities. • **Investment C1.4.I1:** It aims at enhancing the excellence in AI. The center's activity shall be in line with the Coordinated Plan on Artificial Intelligence and the investment aims at following the recommendations of the High-Level Expert Group on AI of the European Commission.	EU 11,8 mln EU 9,4 mln

[8] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis.
[9] Ibid.

	• **Investment C1.4.I13:** The objective is the uptake of new digital technologies aiming at higher competitiveness of aviation industry. • **Investment C5.1.I1** The investment shall enhance scientific support to the public administration, faster and more transparent sharing of scientifically validated information and RDI results. • **Investment C5.2.I4:** This investment supports participation in the Horizon Europe Framework Programme, including projects awarded the Seal of Excellence.	EUR 39,3mln EUR 196,4 mln EUR 19,6 mln
A New European Innovation Agenda		
Flagship 1 Access to finance	• **Investment C1.4.I9[10]:** It supports pilot co-investment funds (a pre-seed fund; a strategic technology fund; a spin off AI fund) for the development of pre-seed investments, strategic technologies and university spin-offs within the framework of European Centres of Excellence.	EUR 55 mln
Flagship 2: Experimentation & Public procurement	• **Reform C1.4.R2:** The aim is to provide a network of accredited laboratories with sufficient testing and certification capacities, hence making certification more accessible, particularly in strategic sectors. It shall also include consultancy and advisory services to firms in preparation for obtaining certification. • **Investment C1.4. I13:** This investment consists of the creation of the infrastructure for a fully digitalised testbed for the aviation industry, including the use of quantum computing technology. • **Investment C1.4.I11[11]:** This measure shall consist of the launch and initial operation of two regulatory sandboxes, notably one in the field of artificial intelligence and one in fintech.	EUR 4,3 mln EUR 39,2 mln EUR 5,9 mln
Flagship 3: Innovation ecosystems	• **Investment C5.1.I1** It aims at strengthening interinstitutional, interdisciplinary and interregional cooperation in R&D&I priority areas and the quality of national research by further increasing international cooperation." • **Investment C1.4.I8[12]:** The measure shall include advisory, consultancy and mentoring services provided via regional innovation and business hubs to newly established business initiatives and start-ups. The measure shall also include-awareness raising campaigns to promote entrepreneurship. • **Investment C5.2.I4:** The measure aims at funding Seal of Excellence projects, in particular the instruments of the European Innovation Council Accelerator, which supports SMEs with the highest potential for rapid growth, as well as	EUR 196,4 mln EUR 5,9 mln EUR 19,6 mln

[10] Ibid.
[11] Ibid.
[12] Ibid.

	supporting European Research Area NET Cofunds. • **Investment C1.4.I5**[13]: The planned investment in the European Blockchain Services Infrastructure (EBSI) falls under the umbrella of the European Blockchain Partnership (EBP) and is expected to be co-financed by the Digital Europe Programme. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 8,8 mln
Flagship 4 Talents	• **Investment C1.4.I10**[14]**:** This measure aims to provide innovators with training, advisory and consulting services by experts in management skills and transfer of best business practices including know-how of foreign markets, use of new digital tools and adaptation to new digital trends.	EUR 8,4 mln

[13] Ibid.
[14] Ibid.

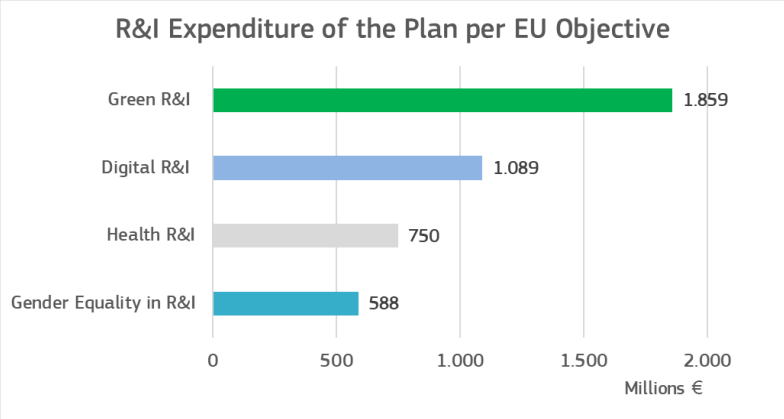
GERMANY

Estimated amount of RRF funds allocated to R&I[1]: **EUR 6,6 bn (i.e. about 26% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the German RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

Mobilising R&I for the twin transition is a key priority of the German RRP. Together, investments in Green and Digital R&I amount to about 45% of the overall R&I investments of the plan.



Health R&I and gender equality in R&I are also important dimensions of the plan. R&I investments in the field of health represent 11,4% of the overall R&I investments of the plan, while R&I investments linked to gender equality account for about 9% of total R&I expenditure.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C1.1-I1:** The investment aims to achieve climate change objectives, in particular through renewable hydrogen. To accelerate the necessary market uptake, specific support will be given to integrated projects along the entire value chain through	EUR 500 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of the Country Fiche under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	an IPCEI hydrogen. • **Investment C1.1-I2:** The aim of the support programme for the decarbonisation of industry is to permanently reduce as much as possible process GHG emissions, which, under the current state of the art, are impossible or difficult to avoid. • **Investment C1.1-I4:** The investment goes into the replacement of CO2-intensive energy sources and feedstocks by renewable carriers, as well as the development of climate-friendly production processes and combinations of processes in industry, which contribute to the direct avoidance of greenhouse gases. • **Investment C1.1-I5:** The investment supports three flagship projects/flagship initiatives laying the research basis for a climate-neutral energy system based on renewable energy and green hydrogen produced from it. • **Investment C1.2-I2:** The investment aims at supporting application-oriented research and development projects and the development of electric mobility concepts. • **Investment C1.2-I7**: The investment supports a competitive supply industry for hydrogen and fuel cell technology. This includes, among other things, enabling the production of fuel cell staples and serial testing of components and vehicles in Germany.	EUR 449,3 mln EUR 50,4 mln EUR 588,2 mln EUR 42 mln EUR 229,4 mln
Digital	• **Investment C2.2-I1:** The investment goes into digitisation and modernisation of the production of the vehicle manufacturers and the supply industry. It supports research and development in new production facilities. • **Investment C2.2-I3:** The investment supports the creation of the Centre for Digitalisation and Technology Research of the Federal Armed Forces (dtec.bw). Amongst others, the dtec.bw will strengthen research and the development of knowledge on new technologies and innovations.	EUR 392,6 mln EUR 588,2 mln
	• **Reform C2.1.R1:** The data strategy 'An innovative data policy for Germany' is one of the central digital policy plans of the Federal Government. It is part of the Federal Government's implementation strategy, the umbrella strategy on the various areas of action in the field of digitalisation.	EUR 108,4 mln
Health	• **Investment C5.1-I3:** The investment aims to increase the development and production capacities in Germany of vaccines against SARS-CoV-2 and to increase the number of subjects in the later clinical trial phases in order to allow an expected effect on the protection of specific groups, such as health workers, already in the experimental phase.	EUR 750 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the German RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, in particular to Actions 1, 5, 8, 11 and 12. Furthermore, the RRP is expected to contribute to flagships 1, 2 and 3 of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 1: European Open Science Cloud	• **Investment C2.1-I3:** The measure will develop at a later stage in the project a link between the IPCEI on Next Generation Cloud Infrastructure and Services and the European Open Science Cloud (EOSC).	EUR 375 mln
ERA Action 5: Gender Equality	• **Investment C2.2-I3:** The measure will develop a creative environment in which women entrepreneurs and young entrepreneurs in general will be specifically supported.	EUR 588,2 mln
ERA Action 8: Research Infrastructures	• **Reform C2.1.R1.1:** The part of the reform on high-performance computing could contribute to increasing cooperation between research infrastructures, e-infrastructures and stakeholders, through networking of supercomputing centres.	EUR 21 mln
ERA Action 11: Energy	• **Investment C1.1-I1** and **Investment C1.1-I3**: These measures notably aim at supporting R&I in the context of the Hydrogen IPCEI. • **Investment C1.1-I5:** This measure aims at supporting flagship projects for R&I in the context of the National Hydrogen Strategy. A first flagship initiative will address the challenges of serial production of water electrolysers, a second flagship will focus on the integrated direct offshore production of hydrogen and its derivatives at sea using offshore wind energy, and a third flagship will explore the potential of hydrogen transport technologies. • **Investment C.1.2-I7**: This measure seeks to contribute to the decarbonisation of the transport sector. A new Hydrogen Technology and Innovation Centre will focus on the hydrogen and fuel cell technology value chain for mobility applications.	EUR 1 000 mln EUR 588,2 mln EUR 458,7 mln
ERA Action 12: Green & Digital	• **Investment C1.1-I2:** The measure helps industry shift from highly emission-intensive production processes to low GHG processes by supporting research and development, testing in experimental or pilot plants and investments in installations for the application and implementation of measures on an industrial scale. • **Investment C1.1-I4:** The projects will focus on climate protection in the basic materials industry with the aim of promoting industrial	EUR 449,3 mln EUR 50,4 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	research and development of new processes that prevent GHG emissions, as well as on SME innovation and on climate resilience by municipalities and local businesses associated with research partners.	
	• **Investment C1.2-I7:** This measure could contribute to the objectives of this action by creating strong links between the hydrogen and fuel cell technology and industrial policies in this domain. The Hydrogen Technology and Innovation Centre will provide a development environment for SMEs and start-ups in view of mobilising private investments.	EUR 458,7 mln
	• **Investment C2.1-I2 & I3.2:** This measure is contributing to the digital transition through investments in digital infrastructure, research and innovation.	EUR 1 875 mln
	• **Investment C2.2-I1.3:** With its focus on R&D projects in the field of digitalisation of production processes and industry 4.0, this measure could contribute to the digital transition of industrial ecosystems.	EUR 392,7 mln
A New European Innovation Agenda		
Flagship 2: Framework conditions	• **Investment C1.1-I1:** The IPCEI could support the development of a vibrant hydrogen economy across the entire value chain and be connected to the test bed of renewable hydrogen.	EUR 1 000 mln
	• **Investment C1.1-I4:** This measure could contribute to enabling innovation though experimentation spaces by supporting real laboratories and any other innovation at municipal level to strengthen climate resilience.	EUR 50,4 mln
	• **Investment C1.2-I7**: This measure has the potential to contribute to the development of a hydrogen economy and to the European mobility test bed.	EUR 458,7 mln
Flagship 3: Innovation ecosystems	• **Investment C1.1-I1:** The objective of the planned hydrogen Important Projects of Common European Interest (IPCEIs) is to accelerate the necessary market uptake of hydrogen and its derivatives to decarbonise emission-intensive processes and develop new areas of application in Germany and in Europe.	EUR 1 000 mln
	• **Investment C1.1-I5 & C1.2-I7:** These measures could contribute to the hydrogen valleys.	EUR 817,6 mln
	• **Investment C2.1-I3:** The objective of the measure is to contribute to a large-scale cross-border initiative (IPCEI) aiming at fostering the development and first industrial deployment of smart cloud and edge solutions that are highly innovative, fully interoperable, highly secure, energy efficient and fully compliant with data protection.	EUR 375 mln
	• **Investment C2.2-I1:** The measure foresees to build regional innovation clusters for the transformation of the vehicle industry.	EUR 196,3 mln

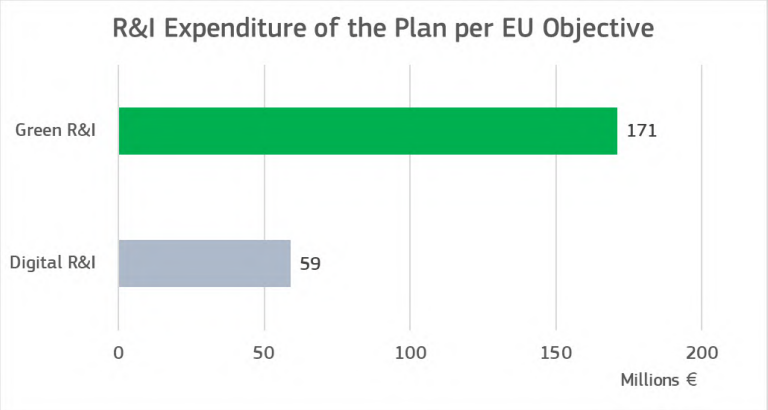
DENMARK

Estimated amount of RRF funds allocated to R&I[1]: **EUR 304 mln (i.e. about 20% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Danish RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Danish RRP contains measures aiming at mobilising R&I for the twin transition. Investments in green R&I represent 56.2% of the overall R&I investments of the plan, while 19.4% of the total R&I investments of the plan are directed towards digital-related R&I areas.



R&I-related measures targeting territorial cohesion, gender and health are not directly part of the Danish Recovery and Resilience Plan.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment DK-C[C2]-I[I3]:**. The purpose of this measure is to establish an Innovation Centre to conduct research, experiments and development within organic agriculture and food and to collect and disseminate knowledge about organic products.	EUR 5 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of the Country Fiche under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of the Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	• **Investment DK-C[C2]-I[I5]:** The purpose of this measure is to further invest in the upscaling of the most promising climate technologies in agriculture on the market. The research in new technologies not only benefits the climate and the environment but also job creation.	EUR 27 mln EUR 27 mln
	• **DK-C[C3]-I[I5]:** This measure supports a feasibility study to target development and demonstration of the technical and economic feasibility of CO2 storage in depleted oil and gas fields in the Danish part of the North Sea.	EUR 2,7 mln
	• **DK-C[C5]-I[I2]:** This investment is part of a series of studies and tests on road-pricing that shall be executed in order to accelerate the decarbonisation of roads (promotion of car-pooling, test-scheme for heavy haulage transportation, optimization of road pricing).	EUR 0,13 mln
	• **DK-C[C5]-I[I4]:** An analysis shall be carried out covering the efficiency of road design, planning and test rides for double trailer vehicles.	EUR 0,13 mln
	• **DK-C[C5]-I[I5]:** An analysis shall be carried out concerning the potential of lower emissions through further adjustments of the current regulation on weight and dimensions of heavy haulage transportation.	EUR 23,5 mln
	• **Investment DK-C[C7]-I[I1.1]:** The objective of the investment "carbon capture and storage or use of CO2" is to develop cost-effective CO2 capture solutions from the largest emitters or from the atmosphere and store carbon or use it in new climate neutral energy sources.	EUR 23,5 mln
	• **Investment DK-C[C7]-I[I1.2]:** The objective of the investment "green fuels for transport and industry" to develop new solutions to create new green fuels, including green hydrogen, and demonstrate how Power-to-X systems may be integrated in the overall energy system.	EUR 23,5 mln
	• **Investment DK-C[C7]-I[I1.3]:** The objective of the investment "climate and environment friendly agriculture and food production" is to increase investments in new technology to further push the boundaries of reducing emissions in the agriculture and food sectors, while maintaining a sustainable production and earnings.	EUR 23,5 mln EUR 15 mln
	• **Investment DK-C[C7]-I[I1.4]:** The objective of the investment "circular economy focusing on reuse and reduction of plastic and textile waste" is to develop solutions to increase resource productivity, decrease plastic and textile waste and increase the use of reusable materials.	
	• **Investments DK-C[C7]-I[I5.1]:** The objective of this action (green part) is to frontload investments in research and development by extending the basis for depreciation of private sector research and	

	development expenses.	
Digital	• **Investment DK-C[C7]-I[I5.2]:**. The objective of this action (digital part) is to frontload investments in research and development by extending the basis for depreciation of private sector research and development expenses.	EUR 59 mln
Other	• **Investment DK-C[C7]-I[I5.3]:** The objective of this action is to frontload investments in research and development other than green or digital by extending the basis for depreciation of private sector research and development expenses	EUR 74 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Danish RRP are expected to contribute to two key actions of the ERA Policy Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 11: Energy	• **DK-C[C3]-I[I5]:** This measure supports a feasibility study to target development and demonstration of the technical and economic feasibility of CO2 storage in depleted oil and gas fields in the Danish part of the North Sea. • **Investment DK-C[C7]-I[I1.1]:** The objective of the investment "carbon capture and storage or use of CO2" is to develop cost-effective CO2 capture solutions from the largest emitters or from the atmosphere and store carbon or use it in new climate neutral energy sources. • **Investment DK-C[C7]-I[I1.2]:** The objective of the investment "green fuels for transport and industry" to develop new solutions to create new green fuels, including green hydrogen, and demonstrate how Power-to-X systems may be integrated in the overall energy system.	EUR 27 mln EUR 23,5 mln EUR 23,5 mln
ERA Action 12: Green & Digital	• **DK-C[C3]-I[I5]:** This measure supports a feasibility study to target development and demonstration of the technical and economic feasibility of CO2 storage in depleted oil and gas fields in the Danish part of the North Sea. • **DK-C[C5]-I[I2]:** This investment is part of a series of studies and tests on road-pricing that shall be executed in order to accelerate	EUR 27 mln EUR 2,7 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	the decarbonisation of roads (promotion of car-pooling, test-scheme for heavy haulage transportation, optimization of road pricing).	EUR 0,13 mln
	• **DK-C[C5]-I[I4]:** An analysis shall be carried out covering the efficiency of road design, planning and test rides for double trailer vehicles.	
	• **DK-C[C5]-I[I5]:** An analysis shall be carried out concerning the potential of lower emissions through further adjustments of the current regulation on weight and dimensions of heavy haulage transportation.	EUR 0,13 mln
	• **Investment DK-C[C2]-I[I3]:**. The purpose of this measure is to establish an Innovation Centre to conduct research, experiments and development within organic agriculture and food and to collect and disseminate knowledge about organic products.	EUR 5 mln
	• **Investment DK-C[C2]-I[I5]:** The purpose of this measure is to further invest in the upscaling of the most promising climate technologies in agriculture on the market. The research in new technologies not only benefits the climate and the environment but also job creation.	EUR 27 mln
	• **Investment DK-C[C7]-I[I1.1]:** The objective of the investment "carbon capture and storage or use of CO2" is to develop cost-effective CO2 capture solutions from the largest emitters or from the atmosphere and store carbon or use it in new climate neutral energy sources.	EUR 23,5 mln
	• **Investment DK-C[C7]-I[I1.2]:** The objective of the investment "green fuels for transport and industry" to develop new solutions to create new green fuels, including green hydrogen, and demonstrate how Power-to-X systems may be integrated in the overall energy system.	EUR 23,5 mln
	• **Investment DK-C[C7]-I[I1.3]:** The objective of the investment "climate and environment friendly agriculture and food production" is to increase investments in new technology to further push the boundaries of reducing emissions in the agriculture and food sectors, while maintaining a sustainable production and earnings.	EUR 23.5 mln EUR 23.5 mln
	• **Investment DK-C[C7]-I[I1.4]:** The objective of the investment "circular economy focusing on reuse and reduction of plastic and textile waste" is to develop solutions to increase resource productivity, decrease plastic and textile waste and increase the use of reusable materials.	EUR 15 mln
	• **Investments DK-C[C7]-I[I5.1]:** The objective of this action (green part) is to frontload investments in research and development by extending the basis for depreciation of private sector research and development expenses.	EUR 59 mln
	• **Investment DK-C[C7]-I[I5.2]:**. The objective of this action	

	(digital part) is to frontload investments in research and development by extending the basis for depreciation of private sector research and development expenses.	

ESTONIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 54,8 mln (i.e. about 6% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Estonian RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

All of the R&I-relevant investments of the Estonian RRP support the EU's green transition. Several measures related to the green transition include R&I elements. Those measures amount to 10,8% of the total RRP envelope.

Key EU Objective[4]	Description of the RRP measures	Estimated investment[5]
Green	• **Investment CB.I-2.4:** This investment aims at accelerating the Green Transition in Enterprises by supporting the modernisation of the business models in manufacturing companies.	EUR 9 mln
	• **Investment CB.I-2.5** This investment aims at accelerating the Green Transition in Enterprises by supporting the deployment of resource-efficient green technologies.	EUR 37,8 mln
	• **Investment CD.I-4.7:** The Pilot Energy Storage Programme aims to increase Energy and Energy Efficiency.	EUR 8 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

The R&I-related measures of the Estonian RRP are expected to contribute to some key actions of the ERA Policy Agenda and to one of the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 11: Energy	• **Investment CD I-4.7:** The Pilot Energy Storage Programme supports investments by heat producers in energy storage equipment as well as investments in batteries by enterprises. It may be considered that part of the investment will support R&I. • **Investment CB I2.7[7]:** The investment aims at supporting the uptake of renewables-based green hydrogen technologies, in relation to the IPCEI on Hydrogen.	EUR 8 mln EUR 50 mln
ERA Action 12: Green & Digital	• **Investment CB I-2.4:** This investment aims at accelerating the Green Transition in Enterprises by supporting the modernisation of the business models in manufacturing companies. • **Investment CB I-2.5:** This investment aims at accelerating the Green Transition in Enterprises by supporting the deployment of resource-efficient green technologies. • **Investment CB I2.7[8]:** The investment aims at supporting the uptake of renewables-based green hydrogen technologies, in relation to the IPCEI on Hydrogen.	EUR 9 mln EUR 37,8 mln EUR 50 mln
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Investment CB I2.6[9]:** The Green Fund ('Rohefond' in Estonian) aims at increasing the supply of venture capital to research-intensive and/or innovative green technology companies. The fund provides equity investments via private fund managers with significant investment focus in Estonia.	EUR 100 mln
Flagship 3 Innovation Ecosystems	• **Investment CB I2.7[10]:** The investments aims at supporting the uptake of renewables-based green hydrogen technologies, in relation to the IPCEI on Hydrogen.	EUR 50 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

[7] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis.

[8] Ibid.

[9] Ibid.

[10] Ibid.

GREECE

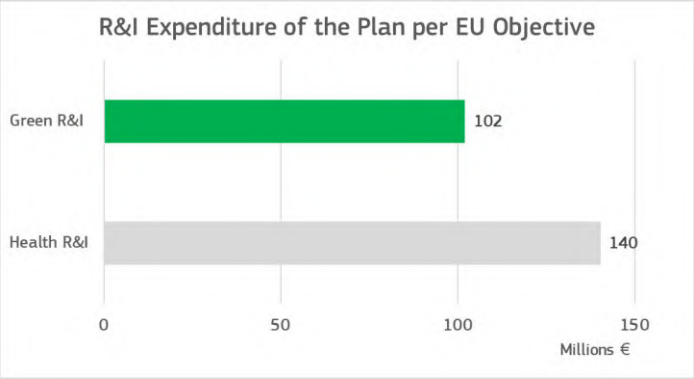
Estimated amount of RRF funds allocated to R&I[1]: **EUR 1,2 bn (i.e. about 4% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Greek RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

Health R&I is an important dimension of the Greek RRP. R&I-related investments in the field of health represent 11,54% of the overall R&O investments of the plan.

Mobilising R&I for the green transition is also a key priority of the Greek RRP. Investments in green R&I represent 8,38% of the overall R&I investments of the plan.



Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment EL-C[4,7]-I[16980.i]:** This investment is part of the RRP Loan Facility and aims at supporting research and innovation processes, technology transfer and cooperation between enterprises focusing on the low carbon economy, resilience and adaptation to climate change.	EUR 102 mln
Health	• **Investment EL-C[4,5]-I[16618]:** This investment aims at	EUR 140,4 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	supporting applied research for precision medicine through a Non-Profit Organization (NPO) under Private Law: the "Hellenic Precision Medicine Network " (HPMN). • **Reform EL-C[3,3]-R[16816]:** This reform, which concerns clawback reduction and rationalization of healthcare expenditure, foresees the financing of clinical trial, R&D or other investment expenditure by liable companies through a partial offset of their clawback liabilities.	EUR 250 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Greek RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, in particular to Actions 4, 7, 8, 10 and 16, as well as to flagship 3 of the New European Innovation Agenda. The RRP includes targeted investments to increase public and private R&D spending and to upgrade the country's research infrastructures, as well as a key reform aimed at increasing the internationalisation of the Greek R&I ecosystem and developing research collaborations.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 4: Researchers and careers	• **Investment EL-C[4,5]-I[16618]:** The investment aims at supporting researchers at the early stages of their careers. • **Reform EL-C[3,2]-R[16289]:** Inter-sectoral mobility will be stimulated through industrially focused research projects, conducted jointly by a private sector company, an Industrial PhD student and a university. Individual researchers and collaborative research projects will also be supported.	EUR 140,4 mln EUR 471 mln
ERA Action 7: Knowledge valorisation	• **Investment EL-C[4,5]-I[16618]:** The investment includes Flagship Research Projects in challenging interdisciplinary sectors with practical applications in Greek Industry. • **Investment EL-C[4,5]-I[16971]:** The investment will fund 36 project proposals that are evaluated with a very high score in the "excellence" criterion in RIS3 sectors. • **Reform EL-C[3,2]-R[16289]:** Inter-sectoral mobility will be stimulated through industrially focused research projects, conducted jointly by a private sector company, an Industrial PhD student and a university. Additionally, individual researchers and collaborative research projects will be supported.	EUR 140,4 mln EUR 25 mln EUR 471 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

ERA Action 8: Research infrastructures	• **Investment EL-C[4,5]-I[16624]:** The investment is an infrastructure upgrade of 13 research centres and the establishment of a new one, in order to enhance research capacity and capabilities in important scientific and technological areas.	EUR 207,4 mln
ERA Action 10: Missions & Partnerships	• **Investment EL-C[4,5]-I[16618]:** The investment foresees participation in two European Partnerships a) Euro-HPC (High Performance Computing) and b) Key Digital Technologies.	EUR 140,4 mln
ERA Action 12: Green & Digital	• **Investment EL-C[4,5]-I[16618]:** This investment includes funding for applied research for Unmanned Systems Research and Development Centre to yield several IPR technologies and support spin-off companies and large corporates. • **Investment EL-C[4,7]-I[16980.i]:** This investment may provide access to cost competitive financing and equity contributions to green and digital start-ups.	EUR 140,4 mln EUR 102 mln
ERA Action 13: Universities	• **Reform EL-C[3,2]-R[16289]:** The Universities of Excellence (UoEs) scheme will contribute to the international positioning and visibility of Greek universities due to their strategies to promote outstanding research and their ability to compete on an international level. Additionally, the reform will perform a Digital Transformation of the National Hellenic Libraries Network.	EUR 471 mln
ERA Action 16: Access to Excellence	• **Investment EL-C[4,5]-I[16618]:** The investment will create structures that will support applied research in the long run, with a solid strategy in terms of priorities and will coordinate research funding in Research Centres and Universities. • **Investment EL-C[4,5]-I[16971]:** The investment aims to connect research and innovation with entrepreneurship with the ultimate objective of transitioning to quality, innovative entrepreneurship and increasing domestic added value. • **Investment EL-C[4,5]-I[16622]:** The investment concerns 13 project proposals awarded with the Seal of Excellence under Horizon 2020. • **Investment EL-C[4,5]-I[16624]:** The investment is an infrastructure upgrade of 13 research centres and the establishment of a new one, in order to enhance research capacity and capabilities in important scientific and technological areas. • **Reform EL-C[3,2]-R[16289]:** The reform should contribute to better international positioning and visibility of Greek universities, by promoting outstanding research and their ability to compete on an international level. • **Reform EL-C[4,5]-R[16621]:** A foreseen platform ("ELEVATE Greece") will promote Greek start-ups worldwide and link the innovation network of Greece at a broader global scale, including Research Centers, Innovation Clusters, Competence Centers and highly innovative firms.	EUR 140,4 mln EUR 25 mln EUR 18 mln EUR 207,4 mln EUR 471 mln EUR 2,8 mln
A New European Innovation Agenda		

Flagship 1: Access to finance	• **Reform EL-C[4,5]-R[16621]:** A foreseen platform ("ELEVATE Greece") will seek to identify promising Greek start-ups and support their growth by providing them with promotion services globally.	EUR 2,8 mln
Flagship 3: Innovation ecosystems	• **Investment EL-C[4,5]-I[16622]:** The investment aims at fostering synergies with Horizon 2020/Horizon Europe, by supporting 13 project proposals awarded with the Seal of Excellence under Horizon 2020. • **Investment EL-C[4,5]-I[16618]:** The investment foresees participation in two European Partnerships a) Euro-HPC (High Performance Computing) and b) Key Digital Technologies • **Reform EL-C[4,5]-R[16621]:** A foreseen platform ("ELEVATE Greece") will promote Greek start-ups worldwide and link the innovation network of Greece at a global scale, including Research Centers, Innovation Clusters, Competence Centers and highly innovative local companies. *In addition, measures relevant to ERA Action 16 (see further above) may also be considered as relevant to this Flagship.*	EUR 18 mln EUR 140,4 mln EUR 2,8 mln

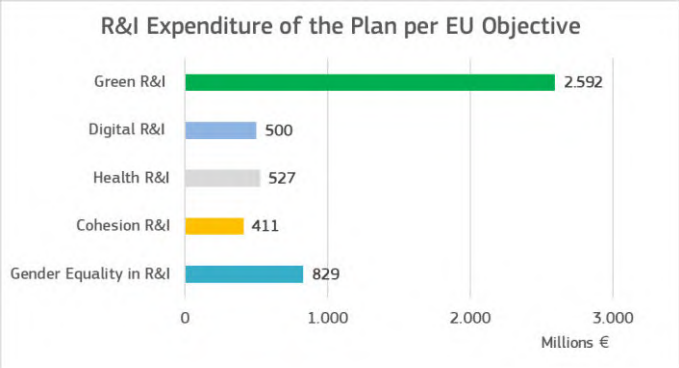
SPAIN

Estimated amount of RRF funds allocated to R&I[1]: **EUR 11 bn (i.e. about 16% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Spanish RRP to 1) key EU policy objectives (green, digital, health, cohesion, and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the twin transition is a key priority of the Spanish RRP. Investments in green R&I represent about 25% of the overall R&I expenditure of the plan, while around 5% of the total R&I investments of the plan are directed towards digital-related R&I areas.



R&I measures related to gender equality in R&I, health and territorial cohesion are also included in the plan. More specifically, support for health aims to strengthen advanced therapies, while enhancing the strategic capacities of the National Health System. Investing in cohesion improves the coordination between the central government and the regions on R&I policies.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C3-I8:** The measure aims to enhance the use of technologies to make the fisheries and aquaculture sector more	EUR 11 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	sustainable. • **Investment C9-I1 and Reform C9-R1:** The implementation of the Hydrogen roadmap will contribute to the production and deployment of hydrogen as well as of the value chain across the country. • **Investment C10-I1.c:** This "Investment in Just Transition" will support, among other initiatives, two R&D&I projects on green hydrogen production and energy storage. • **Investment C12-I2.ai and C12-I2.aii:** Some of the measures planned in the "Programme to boost competitiveness and industrial sustainability" aim to promote the Strategic Projects for Economic Recovery and Transformation (PERTES) in order to accelerate the transformation of strategic sectors, including through the promotion of green technologies. • **Investment C17-I7:** It aims to promote R&D&I specifically for environment, climate change and the energy sector. • **Reform C7-R4:** The aim of this measure is to enhance the framework for innovation and technological development of renewable energy sources, also promoting R&D in the field. • **Reform C8-R4:** The legislation will support the creation of the enabling conditions to test new technologies and introduce new products in the energy sector.	EUR 1.555 mln EUR 30 mln EUR 914 mln EUR 82 mln
Digital	• **Investment C15.I6[6]:** This investment aims to support R&D&I related to 5G and 6G as well as to 5G cybersecurity within the broader framework of 5G deployment in key economic activities. • **Investment C16-I1 and Reform C16-R1:** The National AI Strategy's main focus is on the development of a regulatory framework to accelerate the uptake of artificial intelligence in the country, including through the creation of regulatory sandboxes, while supporting R&D&I missions focused on industrial research in the field. • **Reform C17-R1:** Among other things, the reform of Science, Technology and Innovation Law envisages the setup of digital tools to improve knowledge transfer.	EUR 1.405 mln EUR 500 mln
Territorial Cohesion	• **Investment C10-I1.c:** One of the goals of the "Investment in Just Transition" is to boost economic development, while contributing to social and territorial cohesion. This will also happen through the support to certain R&D&I facilities, linked to Just Transition Institute. • **Investment C17-I1:** The establishment of supplementary R&D&I plans aims to improve the coordination between the national government and regions, in line with their Regional Smart	EUR 30 mln EUR 299 mln

[6] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

	Specialization Strategies (RIS3). • **Investment C17-I7:** This measure will support the building and the equipment of an energy storage R&D centre in Extremadura and can contribute to reducing the innovation gap the region faces. • **Reform C17-R2**: The Spanish Strategy for Science, Technology and Innovation 2021-2027 provides a reference framework for both the national and the regional R&D&I plans, also improving the coordination of R&I policies among different government layers.	EUR 82 mln
Health	• **Investment C17-I6:** The overall objective of this investment is to foster R&D&I in the health sector, with specific reference to advanced therapies, personalized medicine as well as to the fight of infectious diseases. The investment will also support the enhancement of the strategic capacities of the National Health System.	EUR 527 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda[7]

With an estimated investment of EUR 23,4 bn, the R&I-related measures of the Spanish RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, especially to Action 7,8, 10, 11, 12. Albeit to a lesser extent, the RRP R&I-related measures also contribute to the flagships of the New European Innovation Agenda (estimated investment EUR 5,9 bn), in particular Flagship 3. Through its reforms and investments, Spain intends to promote research and innovation for the twin transition, while improving knowledge transfer and offering more opportunities to researchers.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[8]
European Research Area Policy Agenda		
ERA Action 1: EOSC	• **Investment C21-I5**[9]: These are measures to improve the technological and digital capacities and skills of universities, including infrastructure such as cloud data storage networks of servers and cyber security.	EUR 147 mln

[7] The estimated investment is the result of the investments corresponding to each ERA action and NEIA Flagship respectively. However, differences in the grand total might occur due to rounding.

[8] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

[9] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

ERA Action 3: Research assessment	• **Reform C21-R3[10] and C17-R1:** Among other objectives, the comprehensive reform of the university system will set out academic quality criteria for the creation, recognition, authorisation and accreditation of universities and attached centres. The reform of the Science Law establishes the criteria for the assessment of researchers.	-
ERA Action 4: Researchers and careers	• **Investment C17-I4 and Reform C17-R1:** The reform of the Science Law has, among its main objectives, the creation of an attractive and stable scientific career and it is linked to the investment providing support through scholarships and grants (e.g. postdoc programs, industrial PhDs). • **Investment C21-I4[11]:** The initiative focuses on supporting the professional development of university teaching staff through the funding of 3 different programmes supporting young PhDs, personnel on tenure track and international talents.	EUR 294 mln EUR 383 mln
ERA Action 5: Gender equality	• **Investment C13-I1[12]:** Some of the measures included in this investment on entrepreneurship and innovative companies aim to support at least 200 women and to setup a 'Women Talent Programme' targeting at least 800 entrepreneurs. • **Investment C16-I1 and Reform C16-R1:** One of the goals of the National AI Strategy and of the investment linked to it is to address the main societal challenges of Spain, including the gender gap, through the promotion of a regulatory framework as well as the support to R&D&I in the field. Additionally, the setup of Spain Talent Hub will focus on attracting and retaining talents in the field of artificial intelligence, with a specific focus on women's needs. • **Reform C17-R1:** The reform of the Science Law envisages a gender mainstream approach, which includes the following aspects: balanced presence between women and men in relevant bodies, integration of the gender perspective in any new R&I plan/project as well as programmes to support women's career in the research field.	EUR 329 mln EUR 500 mln
ERA Action 7: Knowledge valorisation	• **Investment C3-I5.b and C3-I5.d:** This investment aims at setting up a platform to facilitate knowledge transfer and information among relevant actors active in the agri-food sector. • **Investment C3-I8:** One of the actions focuses on the creation of public-private partnerships to adopt new technologies in the fisheries and aquaculture sector. • **Investment C9-I1:** Among the targets of the investment in renewable hydrogen, there is the support to at least ten SMEs of the value chain to foster production capabilities as well as technology transfer.	EUR 7 mln EUR 11 mln EUR 1.555 mln

[10] Ibid.
[11] Ibid.
[12] Ibid.

	• **Investment C17-I3:** Actions under this investment focus on the enhancement of knowledge generation and transfer as well as public-private partnerships in R&D&I while fostering the collaboration between public research organisations and the private sector. The investment also aims to finance the pre-competitive development to accelerate the transformation of scientific knowledge into products or services. • **Investment C17-I4:** The investment plans, among other actions, to boost business-science linkages through funding programmes supporting the integration of researchers in the private sectors (e.g. "Doctores Industriales grant and Torres Quevedo grant). • **Investment C17-I5**: The support of knowledge transfer consists of incentives for researcher mobility as well as the setup of a flexible legal vehicle to co-invest in technological start-ups. • **Reform C17-R2:** In order to facilitate knowledge valorisation, the Spanish Strategy for Science, Technology and Innovation 2021-2027 envisages the merger of separated strategies on technology, science and innovation.	EUR 1.067 mln EUR 294 mln EUR 402 mln
ERA Action 8: Research infrastructures	• **Investment C9-I1:** The enhancement of the renewable hydrogen value chain envisages, among other actions, the financing of at least ten interventions improving R&D&I test facilities, laboratories and/or related equipment. • **Investment C10-I1.c:** Through this measure, existing research infrastructures will be improved. • **Investment C12-I2d:** This investment focuses on the modernisation of the Spanish Metrology Centre. • **Investment C17-I2:** This comprehensive investments aims at enhancing the capacity of strategic national research infrastructure, including in the renewable energy sector. • **Investment C17-I6:** A part of the investment[13] on R&I in the health sector is earmarked to grants with the goal of boosting the scientific capacities of the research centres affiliated with the National Health System as well as to support scientific and technical equipment (including the renewal of scientific-technical equipment in obsolescence). • **Investment C17-I7:** The measure will finance the building and the equipment of an energy storage R&D centre in Extremadura.	EUR 1.555 mln EUR 30 mln EUR 16 mln EUR 445 mln EUR 75 mln EUR 82 mln
ERA Action 10: Missions & Partnerships	• **Investment C17-I3:** One of the seven calls under this investment concerns the financing of projects from Spanish public researchers that are part of projects selected in the framework of Horizon 2020 and Horizon Europe Partnerships. • **Investment C17-I6:** part of the investment on R&I in the health sector aims to support Horizon 2020 and Horizon Europe	EUR 1.167 mln EUR 527 mln

[13] EUR 75 mln out of EUR 527 mln of the whole investment.

	partnerships for the internationalisation of the National Health System. • **Reform C17-R2:** the Science and Innovation "Missions", as defined in the Spanish Strategy for Science, Technology and Innovation, represent an instrument of national innovation policy to combine the efforts made by the EU in this field and country-specific priorities.	
ERA Action 11: Energy	• **Investment C7-I1:** This investment will support the development of innovative renewable energies to be integrated into buildings and into production processes. • **Investment C9-I1 and Reform C9-R1**: The support of this reform and investment to the setup and implementation of the Hydrogen roadmap includes, among other things, the establishment of two renewable hydrogen clusters integrating large-scale production, processing and consumption. • **Investment C10-I1.c:** The measure earmarks funding towards existing research facilities active on green hydrogen production and energy storage. • **Investment C17-I2:** A Part of the investment will contribute to the upgrading of the infrastructure of the Research Centre for Energy, Environment and Technology (CIEMAT), with a specific focus on research for renewable energy. • **Investment C17-I7:** The objective of this measure is to foster the research development and innovation in the environment, climate change and energy sector. • **Investment C17-I8 and C17-I9**: The measure will support R&D&I projects respectively in the sustainable automotive and in the aerospace sectors. • **Reform C7-R4:** The aim of this measure is to enhance the framework for innovation and technological development of renewable energy sources, also promoting R&D in the field. • **Reform C8-R4:** The legislation will support the creation of the enabling conditions to test new technologies and introduce new products in the energy sector.	EUR 2.365 mln EUR 1.555 mln EUR 30 mln EUR 445 mln EUR 82 mln EUR 240 mln
ERA Action 12: Green & Digital	• **Investment C3-I5b and C3-I5d:** One of the goals of this investment aims at setting up a platform to facilitate knowledge transfer and information among relevant actors active in the agri-food sector, especially small and medium enterprises (SMEs). • **Investment C3-I8:** Research, development and innovation projects for the adoption of new technologies focusing on the sustainability of the fisheries and aquaculture sector, involving the private sector through partnerships with public actors. • **Investment C7-I1:** This measure will support the development of innovative renewable energies to be integrated into buildings and into production processes, including SMEs.	EUR 7 mln EUR 11 mln EUR 2.365 mln

	• **Investment C8-I3[14]:** The measure aims to promote new business models in the energy transition.	EUR 156 mln
	• **Investment C9-I1:** The investment will support SMEs and actors in the hydrogen value chain, including through the integration of hydrogen into industrial processes and supply chains of firms to replace at least 5% of their annual fossil-based hydrogen consumption.	EUR 1.555 mln
	• **Investment C12-I2ai, C12-I2aii and C12-I2b:** The "Programme to boost competitiveness and industrial sustainability" aims, among other things, to enhance technology transfer and innovation as well as cooperation among enterprises in key sectors, encompassing the whole value chain. The action focuses on the implementation of the Strategic Projects for Economic Recovery and Transformation (PERTES).	EUR 1.032 mln EUR 318 mln
	• **Investment C13-I4:** The "Support for Trade" aims help businesses, including SMEs, face the digital transition, including through a Technological Fund.	EUR 1.405 mln
	• **Investment C15-I6:** Among other initiatives, this investment aims to support R&D&I related to 5G and 6G as well as to 5G cybersecurity within the broader framework of 5G deployment in key economic activities.	EUR 500 mln
	• **Investment C16-I1 and Reform C16-R1:** The investment and reform linked to the National AI Strategy will contribute to accelerating the digital transition, including by focusing on industrial research in the field of artificial intelligence.	EUR 299 mln EUR 1.167 mln
	• **Investment C17-I1:** Among other goals, the supplementary plans aim to improve knowledge generation and technological innovation in key strategic areas, including the energy and green hydrogen, with an impact on the transition in the regional ecosystems.	
	• **Investment C17-I3:** The measure will support the enhancement of knowledge generation, knowledge transfer and public-private cooperation through R&D&I projects linked to the green and digital transition.	EUR 82 mln EUR 240 mln
	• **Investment C17-I7:** Support to foster the R&D&I specifically for environment, climate change and the energy sector, including through the development of prototype plants for CO2 capture from industrial process emissions in energy-intensive industries as well as a research strategic metals for the energy transition.	
	• **Investment C17-I8 and C17-I9**: the measure will support R&D&I projects respectively in the sustainable automotive and in the	

[14] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

	aerospace sectors. • **Reform C8-R4:** the legislation will support the creation of the enabling conditions to test new technologies in the energy sector.	
ERA Action 13: Universities	• **Investment C21-I4[15]:** The initiative focuses on supporting the professional development of university teaching staff through the funding of 3 different programmes supporting young PhDs, personnel on tenure track and international talents. • **Investment C21-I5[16]:** It contains measures improving the technological and digital capacities and skills of universities, including infrastructure such as cloud data storage networks of servers and cyber security. • **Reform C21-R3[17]:** The comprehensive reform of the university plans to promote good governance as well as research, transfer and mobility of teaching and research staff, while ensuring the effectiveness, efficiency in the day-to-day management of universities and increasing the participation of stakeholder in the governance.	EUR 383 mln EUR 147 mln
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Investment C8-I3[18]:** It contains support to new business models in the energy transition, including through a focus on start-ups or innovative initiatives in the field of energy. • **Investment C13.I1[19]:** A part of this investment aims at supporting at least 200 female entrepreneurs through participative loans. • **Investment C17-I5:** This measures provides risk capital support to co-invest and invest in tech companies through a technology transfer fund. • **Reform C13-R2[20]:** The Strategy Spain Entrepreneurial Nation aims, among other goals, to setup a NEXT-TECH public-private fund to scale up start-ups in disruptive technologies.	EUR 156 mln EUR 329 mln EUR 402 mln
Flagship 2: Experimentation & Public procurement	• **Investment C8-I3[21]:** It provides support through investment aiming at developing regulatory sandboxes for innovative projects in the field of energy. • **Investment C17-I3:** The measure will support the enhancement of knowledge generation, knowledge transfer and public-private cooperation, including through a specific call to finance pre-commercial public procurement (Alliance for Innovation).	EUR 156 mln EUR 1.167mln

[15] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.
[16] Ibid.
[17] Ibid.
[18] Ibid.
[19] Ibid.
[20] Ibid.
[21] Ibid.

	• **Reform C8-R4:** the legislation will support the creation of the enabling conditions to test new technologies and introduce new products in the energy sector, including regulatory test-beds that allow industrial players to test new technologies. • **Reform C16-R1:** the National AI Strategy will develop the regulatory framework to accelerate the uptake of artificial intelligence in the country, including through the creation of sandboxes. • **Reform C17-R2:** the Science and Innovation "Missions", as defined in the Spanish Strategy for Science, Technology and Innovation, represent an instrument of national innovation policy to combine the efforts made by the EU in this field and country-specific priorities.	
Flagship 3: Innovation ecosystems	• **Investment C9-I1 and Reform C9-R1:** The implementation of the Hydrogen roadmap will contribute to the production and deployment of hydrogen as well as the value chain across the country, accelerating the uptake of the hydrogen economy in the European Union. • **Investment C12-I2ai, C12-I2aii and C12-I2b:** This measure aims to promote the Strategic Projects for Economic Recovery and Transformation (PERTES) with the transformation of strategic sectors for the industrial transition of Spain, with expected positive effects on their innovation ecosystems. • **Investment C17-I1:** The supplementary R&D&I plans focus on enhancing the cooperation among the central government and the different regions, in line with their respective RIS3, while boosting the competitiveness of the strategic innovation ecosystems. • **Investment C17-I3:** One of the seven calls under this investment concerns the financing of projects from Spanish public researchers that are part of projects selected in the framework of Horizon 2020 and Horizon Europe Partnerships. • **Investment C17-I5:** The investment on knowledge transfer includes a call to foster the role of synergies, specifically by supporting Spanish SMEs with the European Seal of Excellence. • **Investment C17-I6:** A part of the investment[22] to enhance R&I in the health sector is earmarked to grants to the Health Institute (Instituto de Salud) Carlos III for the Seal of Excellence. • **Investment C17-I7:** The energy storage R&D centre in Extremadura, financed by this investment, is relevant for green hydrogen.	EUR 1.555 mln EUR 1.032 mln EUR 299 mln EUR 1.167 mln EUR 402 mln EUR 6 mln EUR 82 mln
Flagship 4: Talents	• **Investment C13.I1[23]:** One of the actions envisaged by this investment is the support to at least 800 entrepreneurs by the 'Women Talent Programme'.	EUR 329 mln

[22] EUR 6 mln out of EUR 527 mln of the whole investment.

	• **Reform C13-R2[24]:** The Strategy Spain Entrepreneurial Nation includes the adoption of the start-up law that, among other goals, plans to identify the incentives to attract talented entrepreneurs, also from abroad.	

3. 'Innovative' policy instruments

- **Investment C3-I5b and C3-I5d:** These investments aim to support companies in innovative and digital business projects companies, also through participative loans.
- **Investment C7-I1:** This measure will support the development of innovative renewable energies to be integrated into buildings and into production processes, also through pre-commercial public procurement.
- **Investment C13-I1[25]:** Some of the measures included in this investment on entrepreneurship and innovative companies aim to support at least 200 women through participative loans granted by the National Innovation Enterprise (Empresa Nacional de Innovación).
- **Investment C17-I3:** It aims at the enhancement of knowledge generation, knowledge transfer and public-private cooperation, including through a specific call to finance pre-commercial public procurement (Alliance for Innovation).

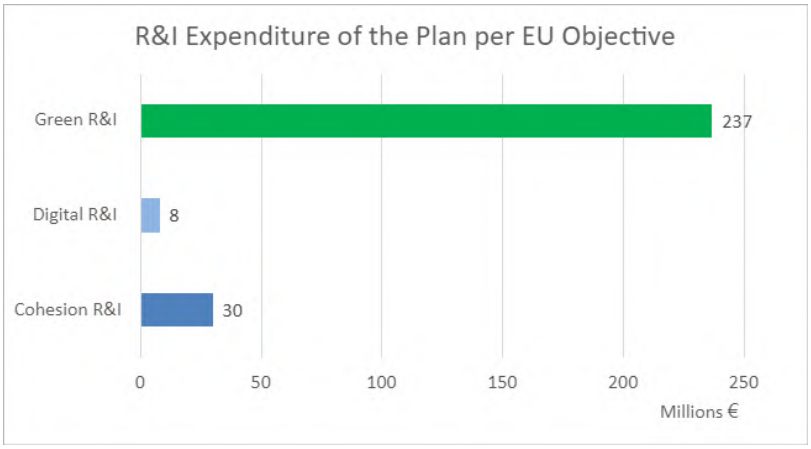
[23] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.
[24] Ibid.
[25] Ibid.

FINLAND

Estimated amount of RRF funds allocated to R&I[1]*:* ***EUR 337 million (i.e., around 16% of the RRP)***

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Finnish RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]*) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)*[3]*.*

1. Key EU Objectives



The RRP includes component P3C3: RDI, Research Infrastructure and Piloting that specifically addresses challenges in the area of research, development and innovation (R&D&I). The objective of the component is to contribute to strengthening RDI intensity, raising the share of RDI expenditure in Finland from 2,9% (2019) to 4% of GDP by 2030 and increasing the ambition level of RDI activities, in line with National Roadmap for Research, Development and Innovation adopted in spring 2020. To this end, the component proposes two investment packages that aim at promoting green transition and investing in research and innovation infrastructure supporting sustainable growth and digitalisation. The package promoting green transition includes investments for supporting projects of leading companies, accelerating key sectors and strengthening competence in key sectors, and for supporting innovative growth companies (investments 1-4). The package promoting innovation and research infrastructures includes investments for the development of local research infrastructures, national research infrastructures and innovation infrastructures.

EU Objectives are funded from the funds allocated to R&I as follows: Green EUR 237 million (around 68% of the overall R&I investments of the plan), Digital EUR 8 million (2%), and Cohesion EUR 30 million (9%).

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

Key EU Objective[4]	Description of the RRP measures	Estimated investment in million EUR[5]
Green transition	• **Investment P1C3 I-I2:** This investment promotes R&D&I in Green Activities (e.g., Climate Change Mitigation, Circular Economy). The supported projects reduce the climate and environmental impacts of the building stock.	EUR 40 mln
	• **Investment P3C3 I-I1**: The scheme managed by Business Finland supports partnerships between companies and research organisations that enhance Research & Development activities and support the green transition. The support is for the creation of new products, businesses and operating models as well as the use of research results from universities, universities of applied sciences and research institutes for the needs of companies.	EUR 100 mln
	• **Investment P3C3 I-I2:** The scheme managed by the Academy of Finland boosts supports R&D&I activities in key sectors and technologies of the green transition. The measure strengthens research clusters and increases their expertise, and to supports the renewal of business activities.	EUR 45 mln
	• **Investment P3C3 I-I3:** The investment managed by the Business Finland boosts R&D&I activities in key sectors and technologies of the green transition. The measure supports private and public research organisations as well as companies or municipalities.	EUR 27 mln
	• **Investment P3C3 I-I4:** The scheme managed by Business Finland increases SME's investments in R&D&I, improving their preparedness for the digital and green transition. The measure provides targeted support to companies with high growth potential that develop solutions for the green transition, boosting the growth of companies engaged in exports and increasing the number of export companies.	EUR 20 mln
	• **Investment P3C4 I-12a:** Key programmes for international growth - Low carbon, circular economy and digital renewal. The Academy of Finland supports projects with scientific quality and effectiveness, contributing to the green transition.	EUR 5 mln

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

Digital transformation	• **Investment P3C3 I-I6b:** RDI, research infrastructure and piloting – National research infrastructures – Digital related activities. The Academy of Finland funds the infrastructures taking into account the scientific significance and impact of the research infrastructure, keeping separate scores for the green transition and for digitalisation..	EUR 8 mln
Territorial cohesion	• **Investment P3C3 I-I5:** The objective of this investment is to finance – via scheme managed by the Academy of Finland - the renewal and development of local research infrastructures. The investments target areas outside the Capital region, benefiting territorial cohesion. The investments cut across all branches of research with emphasis on the green and digital transition. The financial support is provided for the construction of local research infrastructure, such as for the acquisition of equipment and systems, the creation or updating of services.	EUR 30 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

With an estimated investment of EUR 347 million, the R&I-related measures of Finnish RRP are expected to contribute significantly to key actions of the ERA Policy Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 7: Knowledge Valorisation	• **Investment P1C3 I-I2:** One of the focus areas of this investment ('Low-carbon built environment programme') is tech transfer and knowledge sharing.	EUR 40 mln
ERA Action 8: Research Infrastructures	• **Investment P3C3 I-I5** RDI, research infrastructure and piloting – Local research infrastructures. The investments target areas outside the Capital region, benefiting territorial cohesion. The investments cut across all branches of research with emphasis on the green and digital transition. The financial support is provided for the construction of local research infrastructure, such as for the acquisition of equipment and systems, the creation or updating of services. *(The same application applies as for the key EU Objectives part)* • **Investment P3C3 I-I6** RDI, research infrastructure and piloting – National research infrastructures – Digital activities. The Academy of Finland supports projects by research organisations such as universities and research institutions.	EUR 30 mln EUR 20 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	(The same application applies as for the key EU Objectives part) • **Investment P3C3 I-I7** RDI, research infrastructure and piloting – Competitive funding for innovation infrastructures. The projects are funded by the Business Finland.	EUR 25 mln
ERA Action 12: Green & Digital	• **Investment P1C3 I-I2:** This investment promotes R&D&I In Green Activities (e.g., Climate Change Mitigation, Circular Economy). The supported projects reduce the climate and environmental impacts of the building stock. The investment budget is EUR 40 million, out of which 32-34 million is foreseen for R&D&I support actions. • **Investment P2C2 I-I3a:** This investment aims at accelerating the data economy and digitalisation; supported projects accelerate key technologies in Microelectronics value chain. The measure is implemented by Business Finland via participation in relevant IPCEI competition, so the R&I share of the investments may be considered more than half (60%). In addition, the participating enterprises only receive 5-20% support. • **Investment P2C2 I-I3b:** This application round (b) of the investment aims at accelerating the data economy and digitalisation. Supported projects accelerate key technologies such as 6G, artificial intelligence and quantum computing. • **Investment P3C3 I-I1** RDI, research infrastructure and piloting – Leading companies. The scheme managed by Business Finland supports partnerships between companies and research organisations that enhance Research & Development activities to support the green transition. The support is for the creation of new products, businesses and operating models as well as the use of research results from universities, universities of applied sciences and research institutes for the needs of companies. *(The same application applies as for the key EU Objectives part)* • **Investment P3C3 I-I2** RDI, research infrastructure and piloting – Accelerating key sectors and strengthening competence. The scheme managed by the Academy of Finland boosts supports via R&D&I activities in key sectors and technologies of the green transition. The measure strengthens research clusters and increases their expertise, and to supports the renewal of business activities. *(The same application applies as for the key EU Objectives part)* • **Investment P3C3 I-I3** RDI, research infrastructure and piloting – Accelerating key sectors and strengthening competence. The investment managed by the Business Finland boosts R&D&I activities in key sectors and technologies of the green transition. The measure supports private and public research organisations as well as companies or municipalities. *(The same application applies as for the key EU Objectives part)* • **Investment P3C3 I-I4** RDI, research infrastructure and piloting – Supporting innovative growth companies. The scheme managed by Business Finland increases SME's investments in R&D&I, improving their preparedness for the digital and green transition. The measure provides targeted support to companies with high growth potential	EUR 40 mln EUR 15 mln EUR 10 mln EUR 100 mln EUR 45 mln EUR 27 mln EUR 20 mln

	that develop solutions for the green transition, boosting the growth of companies engaged in exports and increasing the number of export companies. *(The same application applies as for the key EU Objectives part)* • **Investment P3C4 I-12a** Key programmes for international growth - Low carbon, circular economy and digital renewal. The Academy of Finland supports projects with scientific quality and effectiveness, contributing to the green transition. *(The same application applies as for the key EU Objectives part)*	EUR 5 mln
A New European Innovation Agenda		
Flagship 3: Innovation ecosystems	• **Investment P2C2 I-I3a:** This investment aims at accelerating the data economy and digitalisation; supported projects accelerate key technologies in Microelectronics value chain. The measure is implemented by Business Finland via participation in relevant IPCEI competition, so the R&I share of the investments may be considered more than half (60%). In addition, the participating enterprises only receive 5-20% support. • **Investment P2C2 I-I3b:** This application round (b) of the investment aims at accelerating the data economy and digitalisation. Supported projects accelerate key technologies such as 6G, artificial intelligence and quantum computing.	EUR 15 mln EUR 10 mln

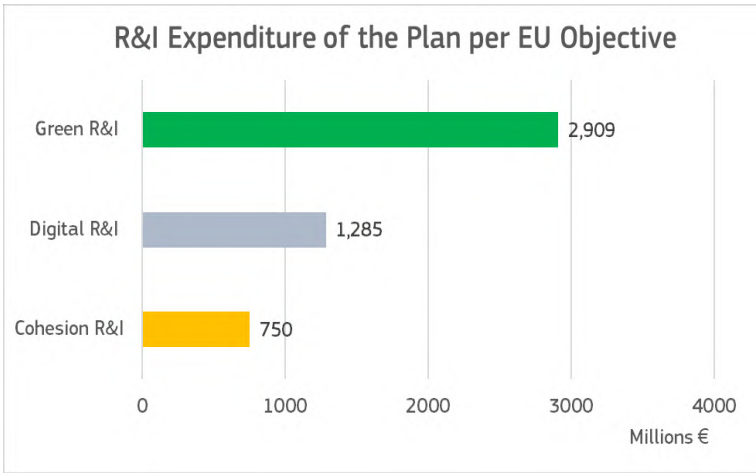
FRANCE

Estimated amount of RRF funds allocated to R&I[1]: **EUR 5,26 bn (i.e. about 13% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the French RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the twin transition is a key priority of the French RRP. Investments in green R&I represent more than half of the overall R&I expenditure of the plan, while 24%[4] of the total R&I investments of the plan are directed towards digital-related R&I areas.



Territorial cohesion is also an important dimension of the plan. In the field of R&I, support is notably foreseen to help shape and reinforce higher education, research and innovation ecosystems at local and regional levels, while encouraging their differentiation.

Key EU Objective[5]	Description of the relevant RRP measures	Estimated investment[6]

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] This share for digital R&I is based on the measures which have been assigned to the "digital R&D&I" policy area in FENIX. It notably does not include investment C6-I2 on innovation in digital technologies as its different sub-investments have been assigned to other policy areas in FENIX such as 'digital capacities', 'connectivity' or 'human capital in digitalisation'.

[5] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I

Green	• **Investment C4-I1:** Under the 'Investments for the Future' programme, this investment aims at fostering R&I in the following areas: decarbonised hydrogen, decarbonisation of industry, sustainable agriculture, recycling and reincorporation of materials, sustainable cities and buildings, decarbonisation of mobility, biobased products. • **Investment C4.I3**: This measure notably aims at supporting R&D in green aircraft technologies (and corresponds to the green-related part of the investment). • **Investment C7-I11.S4:** this measure foresees the creation of a fund for ecological transition to finance R&D projects aimed at reducing the carbon footprint of the press sector. Beyond these investments directly targeting green R&I, the French plan contains horizontal R&I support schemes for which a specific share of the corresponding investment has been tagged as contributing to climate objectives[7]. This includes: • **Investment C6.I3,** which contains several schemes supporting innovative businesses, and covering notably: feasibility studies, individual or collaborative R&D projects and business creation support for young researchers. • **Investment C9.I7**, which aims at enhancing the budget of the National Research Agency, thereby allowing to raise the success rate of its calls for projects from 16% to 23%. • **Investment C9.I8** notably aims at launching a specific call for projects to support the strengthening and differentiation of universities to help them reach the best international standards • **Reform C4.R1:** The purpose of this reform is to revise the governance of the 'Investments for the Future' programme with a view to ensuring a clearer strategic steer of its different thematic investment strategies.	EUR 1 350 mln EUR 959 mln EUR 16 mln EUR 225 mln EUR 171,2 mln EUR 187,5 mln
Digital	• **Investment C6-I2[8]:** Under the 'Investments for the Future' programme, this measure aims at fostering R&I in the following areas: quantum, cybersecurity, edtech, creative industries, 5G, and	*EUR 1 800 mln*[10]

expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

[7] In general, the 'climate-related' share was estimated based on the number of green-related projects which are expected to be funded under the programme.

[8] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

[10] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

	cloud. • **Investment C4.I3**: This measure aims at supporting R&D in the aeronautics sector (and corresponds to the part of the investment which is tagged as indirectly contributing to the low-carbon economy). • **Investment C6.I4:** This measure includes support for space R&D projects. Beyond these investments directly targeting green R&I, the French plan contains horizontal R&I support schemes for which a specific share of the corresponding investment has been tagged as contributing to digital objectives[9]. This includes: • **Investment C6.I1**, which aims at preserving employment in private R&D through four intersectoral mobility schemes designed to incentivise companies to hire young researchers or have their own R&D staff engage in doctoral studies or start a postdoc in a public research lab. • **Investment C6.I3** which includes several schemes supporting innovative businesses, and covering notably: feasibility studies, individual or collaborative R&D projects and business creation support for young researchers. • **Investment C9.I7**, which aims at enhancing the budget of the National Research Agency, thereby allowing to raise the success rate of its calls for projects from 16% to 23%. • **Investment C9.I8** notably aims at launching a specific call for projects to support the strengthening and differentiation of universities to help them reach the best international standards. • **Reform C4.R1:** The purpose of this reform is to revise the governance of the 'Investments for the Future' programme with a view to ensuring a clearer strategic steer of its different thematic investment strategies.	EUR 411 mln EUR 170 mln EUR 120 mln EUR 225 mln EUR 171,2 mln EUR 187,5 mln
Territorial Cohesion	• **Investment C9.I8:** The aim of the call for projects "Excellence in all its forms" is to support higher education and research institutions with an ambitious transformation project at local level, developed on the basis of their territorial dynamics and specific needs.	EUR 750 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

[9] In general, the 'digital-related' share was estimated based on the number of digital-related projects which are expected to be funded under programme.

The R&I-related measures of the French RRP are expected to significantly contribute to key actions of the ERA Policy Agenda, as well as to the New European Innovation Agenda, and in particular the flagships on 'Access to Finance', 'Innovation Ecosystems' and 'Talents'.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[11]
European Research Area Policy Agenda		
ERA Action 3: Research assessment	• **Reform C6.R1:** The Research Law foresees a reform of the High Council for the Evaluation of Research and Higher Education (HCERES), which becomes an independent public authority with legal personality and with an enriched set of missions (e.g. scope of evaluations extended to all higher education and research institutions, new task of contributing to the definition of a national policy on scientific integrity).	
ERA Action 4: Researchers and careers	• **Investment C6.I1**: The measure aimed at "preserving employment in private R&D" includes four intersectoral mobility schemes to incentivise companies to hire young researchers or have their own R&D staff engage in doctoral studies or start a postdoc in a public research lab. • **Reform C6.R1:** One of the three main goals of the Research Programming Law is to strengthen the attractiveness of research careers (through better remuneration and new recruitment channels including the new 'chaires de professeurs junior', a French adaptation of the 'tenure tracks').	EUR 300 mln
ERA Action 7: Knowledge valorisation	• **Investment C6.I1**: The measure aimed at 'preserving employment in private R&D' includes four intersectoral mobility schemes to incentivise companies to hire young researchers or have their own R&D staff engage in doctoral studies or start a postdoc in a public research lab. • **Investment C6.I3**: This measure includes support schemes aimed at accompanying the creation and growth of innovative technology companies through aid to guide young researchers towards creating a business and to capitalise on the results of public research, incentives for companies to work with public research labs, and support for start-ups and SMEs' innovation projects with high potential. • **Reform C6.R1:** One of the three main goals of the Research Programming Law is to strengthen academia-business linkages and notably to make it easier for researchers to create a business and to	EUR 300 mln EUR 750 mln

[11] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	combine academic work with business activity.	
ERA Action 11: Energy	• **Investment C4-I1.S1**: This measure aims at supporting innovation projects carried out in the context of the 'acceleration strategy' on decarbonised hydrogen set up under the 'Investments for the Future' Programme.	EUR 500 mln
ERA Action 12: Green & Digital	• **Investment C4-I1:** Funding for green industrial R&I and the development of low-carbon technologies is foreseen under the 'Investments for the Future' Programme. • **Investment C4.I3**: This measure notably aims at supporting R&D in green aircraft technologies. • **Investment C7-I11.S4:** This measure foresees the creation of a fund for ecological transition to finance R&D projects aimed at reducing the carbon footprint of the press sector. • **Investment C6-I2[12]:** Under the 'Investments for the Future' programme, this measure aims at fostering R&I in the following areas: quantum, cybersecurity, edtech, creative industries, 5G, and cloud.	EUR 1 350 mln EUR 1 370 mln EUR 16 mln EUR 1 800 mln
ERA Action 13: Universities	• **Investment C9.I8:** This measure aims at strengthening higher education, research and innovation ecosystems. In particular, the calls for proposals "Excellence in all its forms" will support the strengthening, transformation and differentiation of universities to help them reach the best international standards.	EUR 750 mln
ERA Action 14: Citizen engagement	• **Reform C6.R1:** The Research Law includes, mainly in its attached report, measures to strengthen relations between science and society, including the creation of the label 'Science Avec et Pour la Société' for higher education and research institutions which are committed to implement actions on scientific mediation/communication, valorising scientific expertise in the media and citizen's participation in research.	
A New European Innovation Agenda		
Flagship 1: Access to Finance	• **Investment C6.I3:** The objective of this measure is to support innovative companies, under the 'volet structurel' of the fourth 'Investments for the Future' programme. It notably includes the 'Bpifrance innovation aid' which aims at supporting SMEs and start-ups (including technology-intensive start-ups, known as deep tech) to enable them to finance feasibility studies, industrial research and/or experimental development.	EUR 750 mln
Flagship 3: Innovation	• Some of the thematic R&I investments of the French RRP will be implemented through multi-country initiatives (IPCEIs), notably on	EUR 500 mln

[12] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

ecosystems	hydrogen (**investment C4-I1**). • **Investment C9.I8:** The aim of this measure is to help shape and reinforce higher education, research and innovation ecosystems at local and regional levels, while encouraging their differentiation, notably through the 'Excellence in all its forms' call for proposals.	EUR 750 mln
Flagship 4: Talents	• **Investment C6.I1**: the measure 'preserving employment in private R&D' aims at compensating an anticipated contraction of the R&D investment of French firms and preventing talents from moving abroad.	EUR 300 mln

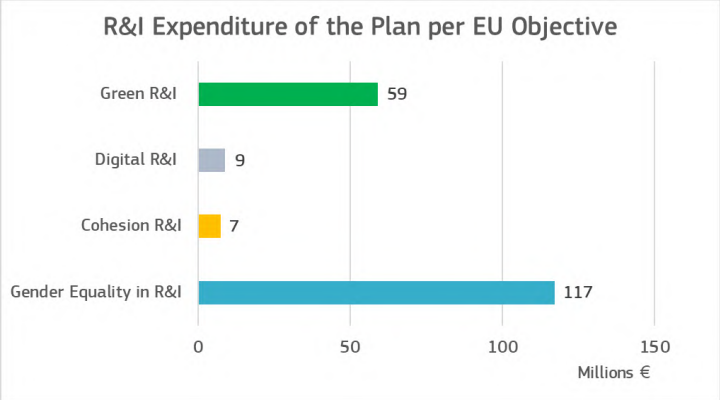
CROATIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 308,91 mln (i.e. about 5% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Croatian RRP to (1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]), (2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Croatian RRP contains R&I investment for the twin transition. Investments in green R&I represent around 20% of the overall expenditure of the plan, while 3% of the total R&I investments of the plan are directed towards digital-related R&I areas.



Additionally, the RRP contains measures supporting Gender Equality in R&I as well as Territorial cohesion. In the field of R&I, support is notably foreseen to strengthen Public Research Organisations across the country through infrastructure investments and joint projects. More information on relevant measures for supporting gender equality can be found further below under ERA Action 5.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Reform C.1.1.1.R4:** The measure aims at increasing investment in green technologies to enhance the uptake in private companies. • **Reform C3.2.R1:** Through the introduction of performance-based funding the reform also seeks to improve business-science collaboration also facilitating funding for Green RDI projects.	

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link)

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of the Country Fiche under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of the Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	• **Investment C.1.2.R1.I3:** The objective of this investment is to improve the use of hydrogen and new technologies in Croatia, in order to decrease greenhouse gas (GHG) emissions in transport sector and industry. • **Investment C.1.2.R1.I4:** The objective of this investment is to increase the share of renewables in transport, and to support the decarbonisation of the transport sector, by creating production capacity for advanced biofuels. • **Investment C.1.4.R2.I6:** The objective of the investment is the procurement of two prototype trains (Battery electric motor train (BEMV) and Battery motor train (BMV)), which may avoid costly investments in electrification of lines and maintenance of the overhead contact line.	EUR 12,7 mln EUR 33,18 mln EUR 13,27 mln
Digital	• **Reform C.1.1.2.R2:** One of the objectives is to boost the digital transformation of the economy, among others through support programmes for younger and smaller businesses and early stages of innovation development. • **Investment C3.2.R1-I1 (submeasure):** The investment seeks to enhance excellence of universities by introducing performance-based funding, also facilitating funding for Digital-related RDI projects. • **Investment C3.2.R2-I1 (submeasure):** The measure has the objective to increase the number of researchers and to enhance the country's potential for innovation, also in relation to digital RDI	EUR 5,8 mln EUR 3,1 mln
Territorial Cohesion	• **Reform C1.1.2.R4**: This measure is the necessary reform to establish Digital Innovation Hubs in Croatia. The envisaged Digital Innovation Hubs are to be developed equally throughout Croatia, contributing to territorial cohesion. • **Investment C1.1.2.R4.I1:** The investment shall provide financial support for the establishment and operation of European Digital Innovation Hubs. The envisaged Digital Innovation Hubs are to be developed equally throughout Croatia, contributing to territorial cohesion.	EUR 7,49 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Croatian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda and to some of the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

European Research Area Policy Agenda		
ERA Action 1: EOSC	• **Reform C3.2.R2:** An information system will be developed that will enable and promote open science in a way that will enable transparency and public availability of research data.	
ERA Action 4: Researchers and careers	• **Reform C3.2.R2:** The reform has the objective to make research careers more attractive through transparent and merit-based recruitment and by addressing burdensome administration. • **Investment C3.2.R2-I1**: The objective of this investment is to develop and introduce a new enabling framework and incentive system for the development of researchers' careers. Calls for proposal target among others Mobility of PhDs.	EUR 44,12 mln
ERA Action 5: Gender equality	• **Investment C3.2.R2-I1**: Funding programmes for research projects under C3.2 R2-I1 will respect all rules and principles of equal treatment and opportunities between women and men and equal opportunities irrespective of gender. • **Investment C3.2.R3-I1**: The programme framework plans to include calls funding projects with STEM and ICT equality topics (e.g. addressing gender bias in artificial intelligence)	EUR 44,12 mln EUR 73 mln
ERA Action 7: Knowledge valorisation	• **Reform C3.2.R1:** Through the introduction of performance-based funding the reform also seeks to improve business-science collaboration. • **Reform C3.2.R2:** The reform is expected to allow human capital to spill over from scientific institutions to the economy through the transfer of specialised knowledge, advanced technologies and collaboration between academia and business. • **Reform C3.2.R3:** In the context of the reform, the Croatian Science Foundation is envisaged to be transferred into a body that supports technology and knowledge transfer and thus contributed to improving science-business collaboration in the country. • **Investment C3.2.R1-I1:** The financing of the programme agreements signed by the universities depends to an extent on indicators linked to business-science collaboration (Introduction of performance-based funding of PRO). • **Investment C3.2.R2-I1:** The envisaged programmes (Mobility, support for young researchers, etc.) should also target business-science collaboration. • **Investment C3.2.R2-I2:** It supports the digital transition through investments in key infrastructure projects for applied and targeted research, to enable young researchers to develop careers in cooperation with the business sector and provide experienced researchers with a collaborative platform for innovation activities. • **Investment C3.2.R3.I1:** The envisaged programmes should also target business-science collaboration (e.g. technology transfer programme, intersectoral mobility programme).	EUR 59,7 mln EUR 44,12 mln EUR 71,87 mln EUR 73 mln
ERA Action 8: Research	• **Investment C3.2.R2-I2:** The objective of this investment is to support the digital transition through investments in key	EUR 71,87 mln

infrastructures	infrastructure projects for applied and targeted research, to enable young researchers to develop careers in cooperation with the business sector and provide experienced researchers with a collaborative platform for innovation. • **Investment C3.2.R1-I2[7]:** The objective of this investment is to help reduce the fragmentation of the scientific system through the construction of infrastructure to allow for the consolidation of universities and scientific institutes.	EUR 62,38 mln
ERA Action 12: Green & Digital	• **Reform C.1.1.1.R4:** The measure aims at increasing investment in green technologies to enhance the uptake in private companies. • **Reform C.1.1.2.R2**: One of the objectives is to boost the digital transformation of the economy, among others through support programmes for younger and smaller businesses and early stages of innovation development. • **Reform C.1.1.2.R3:** It is the objective of the reform to develop a framework for the digitalisation in particular for businesses to develop and apply AI. • **Reform C.1.1.2.R4:** The aim of the reform is to support the digitalisation and digital transformation of businesses and other users at national level by developing the National Framework for the Establishment and Monitoring of Systems for Digital Innovation Hubs in Croatia. • **Investment C.1.2.R1.I3:** The objective of this investment is to improve the use of hydrogen and new technologies in Croatia, in order to decrease greenhouse gas (GHG) emissions in transport sector and industry. • **Investment C.1.2.R1.I4:** The objective of this investment is to increase the share of renewables in transport, and to support the decarbonisation of the transport sector, by creating production capacity for advanced biofuels. • **Investment C.1.4.R2.I6**: The objective of the investment is the procurement of two prototype trains (Battery electric motor train (BEMV) and Battery motor train (BMV)), which may avoid costly investments in electrification of lines and maintenance of the overhead contact line. • **Investment C3.2.R2-I2**: The objective of this investment is to support the digital transition through investments in key infrastructure projects for applied and targeted research, to enable young researchers to develop careers in cooperation with the business sector and provide experienced researchers with a collaborative platform for innovation. • **Investment C1.1.2.R2-I5[8]:** The measure prioritises project linked to the green transition and can thus be connected to Action 12. • **Investment C1.1.2.R3-I1[9]:** This measures aims at providing financial support for procuring technical assistance for the drafting of the National Plan for the Digital Transformation. • **Investment C1.1.2.R4-I1[10]:** The aim of the investment is to	EUR 12,7 mln EUR 33,18 mln EUR 13,27 mln EUR 71,87 mln EUR 50,43 mln EUR 0,39 mln EUR 7,5 mln

[7] This reform was not tagged as R&I relevant in FENIX and was added manually to the analysis.
[8] This reform was not tagged as R&I relevant in FENIX and was added manually to the analysis.
[9] Ibid.

	support the digitalisation and digital transformation of businesses and other users at national level by developing the National Framework for the Establishment and Monitoring of Systems for Digital Innovation Hubs in Croatia.	
ERA Action 13: Universities	• **Reform C3.2.R1:** The reform seeks to enhance excellence of universities by introducing performance-based funding, increasing budget of PROs and by improving internationalisation. • **Investment C3.2.R1-I1:** The investment seeks to enhance excellence of universities by introducing performance-based funding, increasing budget of PROs and by improving internationalisation	EUR 59,7 mln
ERA Action 16: Access to Excellence	• **Reform C1.1.2.R1:** The planned assessment and reform of the R&D incentive system (incl. tax incentives) has the objective to increase R&D investment of businesses. • **Reform C3.2.R1:** The reform seeks to enhance excellence of PROs by introducing performance-based funding, increasing budget of PROs and reducing the fragmentation of the research system. • **Reform C3.2.R2:** The measure has the objective to increase the number of researchers and to enhance the country's potential for innovation. • **Reform C3.2.R3:** The objective of this reform is to implement a more functional governance model for competitive research enabling a faster, merit-based selection process of research projects. • **Investment C1.1.2.R1-I1:** The planned investments to finance the assessment of the analysis of R&D tax incentives has the objective to increase R&D investment of businesses. • **Investment C3.2.R1-I1:** The objective of this investment is to improve the system of funding for scientific work to achieve higher quality and greater relevance of research results. • **Investment C3.2.R2-I1:** The measure has the objective to increase the number of researchers and to enhance the country's potential for innovation. • **Investment C3.2.R2-I2:** The investment aims at financing R&I infrastructure to provide the basis for conducting excellent research. • **Investment C3.2.R3-I1:** The objective of this measure is to improve the existing system of research, development and innovation (R&D&I) financing and support the development of cutting-edge research and products. • **Investment C3.2.R1-I2[11]:** The overarching objective of this investment is to strengthen institutional capacity and excellence.	EUR 0,3 mln EUR 59,7 mln EUR 44,12 mln EUR 71,87 mln EUR 73 mln EUR 62,38 mln
A New European Innovation Agenda		
Flagship 1: Access to	• **Reform C.1.1.1.R4:** It is one of the objectives of the measure to increase access to finance of private companies to enhance	

[10] Ibid.
[11] Ibid.

finance	the green transition. • **Reform C1.1.2.R4:** The reform aims at developing Digital Innovation Hubs. Venture Capital Funds will be among the partners within the hubs to provide businesses with funding. • **Investment C1.1.2.R2-I3[12]:** The objective of this investment is to stimulate the growth of start-ups in the high-tech and knowledge-based sectors in the pre-commercial phase through support for product development. • **Reform C1.1.2.R4-I1[13]:** The investment aims at developing Digital Innovation Hubs. Venture Capital Funds will be among the partners within the hubs to provide businesses with funding.	EUR 18,8 mln EUR 7,5 mln
Flagship 2: Experimentation & Public procurement	• **Reform C1.1.2.R3:** It is the objective of this reform to address the framework conditions for the digital transformation supporting the application and the take up of AI in businesses.	
Flagship 3: Innovation ecosystems	• **Reform C1.1.2.R4:** The reform aims at improving the ecosystem linked to digitalisation in the country through Digital Innovation Hubs. • **Investment C1.1.2.R4-I1:** The investment aims at improving the ecosystem linked to digitalisation in the country through Digital Innovation Hubs. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 7,5 mln
Flagship 4: Talents	• **Reform C1.1.2.R3:** Strengthening digital skills' is one of the features of the reform, which is in line with the flagship on fostering, attracting and retaining deep tech talents. • **Reform C1.1.2.R4:** The Digital Innovation Hubs will among other things serve to build up the necessary capacities in businesses concerning digital skills. • **Reform C3.2.R2:** The reform has the objective to make research careers more attractive through transparent and merit-based recruitment and by addressing burdensome administration, thus it would support the development of deep tech talents. • **Investment C3.2.R2-I1:** The measure has the objective to increase the number of researchers and to enhance the country's potential for innovation. • **Investment C1.1.2.R2-I4[14]:** The acceleration programme shall provide mentoring, support for investment readiness and access to investor networks, this can be seen as in line with the objective of NEIA 4 to foster deep tech talent.	EUR 44,12 mln EUR 8 mln

[12] This reform was not tagged as R&I relevant in FENIX and was added manually to the analysis.
[13] Ibid.
[14] The investment is not assigned to a R&I-related policy area in the FENIX database but has been considered as relevant for the purpose of this analysis.

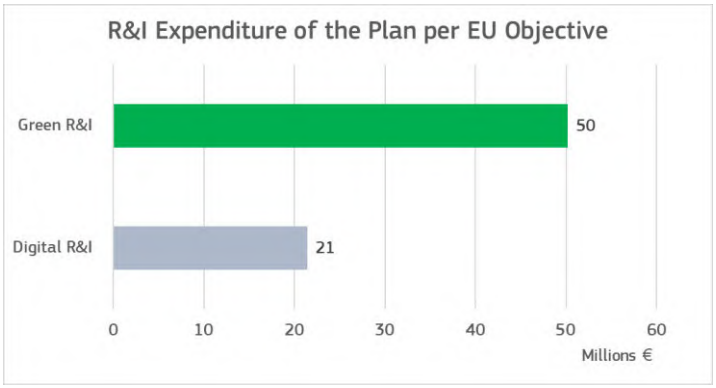
IRELAND

Estimated amount of RRF funds allocated to R&I[1]: **EUR 71.613.000 (i.e. about 7.16 % of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Irish RRP to 1) key EU policy objectives (green, digital, health, cohesion and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

The Irish RRP contains measures aiming at mobilising R&I for the twin transitions. Investments in green R&I represent 70.1% of the overall R&I investments of the plan, while 29.9% of the total R&I investments of the plan are directed towards digital-related R&I areas.



Measures targeting territorial cohesion, gender equality in R&I and health are not directly part of the Irish Recovery and Resilience Plan.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment IE-IE-C[C1]-I[I5.1]:**. The objective of the investment is to use a challenge-based funding model devised by Science Foundation Ireland to support research and innovation projects, which incentivises researchers to focus efforts on delivering tangible impact for society. The investment includes five green challenges.	EUR 50.18 mln
Digital	• **Investment IE-IE-C[C1]-I[I5.2]:**. The objective of the investment is	EUR 21.43 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication.

	to use a challenge-based funding model devised by Science Foundation Ireland to support research and innovation projects, which incentivises researchers to focus efforts on delivering tangible impact for society. The investment includes two digital challenges.	

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Irish RRP are expected to contribute to one key action of the ERA Policy Agenda. No direct linkage to the flagships of the New European Innovation Agenda was found.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 12: Green & Digital	• **Investment IE-IE-C[C1]-I[I5.1]:** The objective of the investment is to use a challenge-based funding model devised by Science Foundation Ireland to support research and innovation projects, which incentivises researchers to focus efforts on delivering tangible impact for society. The investment includes five green challenges. • **Investment IE-IE-C[C1]-I[I5.2]:**. The objective of the investment is to use a challenge-based funding model devised by Science Foundation Ireland to support research and innovation projects, which incentivises researchers to focus efforts on delivering tangible impact for society. The investment includes two digital challenges.	EUR 50.18 mln EUR 21.43 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication.

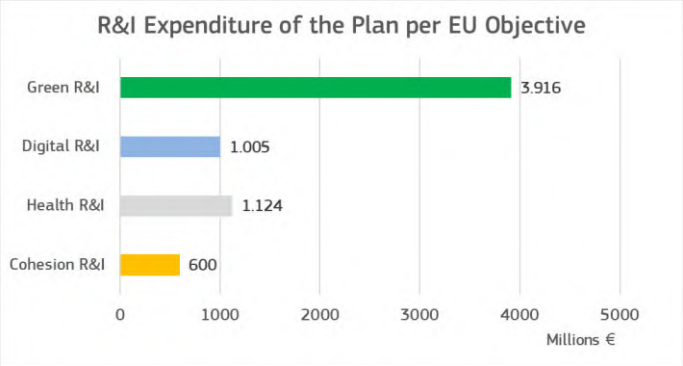
ITALY

Estimated amount of RRF funds allocated to R&I[1]: **EUR 14,3 bn (i.e. about 7% of the RRP)**.

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Italian RRP to 1) key EU policy objectives (green, digital, health, cohesion, and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the green transition is a key priority of the Italian RRP, reflecting Italy's competitive advantage in green technologies. The Digital R&I expenditure is smaller than the Green one but still substantial. The R&I component of Health, besides adequate investments, entails a needed reform aimed at enhancing translational research performed by Care and Research Institutes. Territorial cohesion is also an important dimension given Italy's territorial diversities and persistent R&I gap.



Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment [M2C2] 3.1.b** concerns the production of Hydrogen in brownfield sites (Hydrogen Valleys). The project has the objective of a re-use of abandoned industrial areas to testing units for hydrogen production from local RES plants located in the same industrial space and facilities or in neighbouring areas in Southern Italy. • **Investment [M2C2] 3.5** consists in supporting hydrogen R&D activities in Green and Clean Hydrogen production, storage, transport and transformation into derivates and e-fuels; Fuel Cells for stationary and mobility application; Integrated smart management systems to increase the resilience and reliability of intelligent hydrogen-based infrastructures	EUR 150 mln EUR 160 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	• **Investment [M2C2] 5.1.3** consists of the development of a value chain in renewables and batteries by means of strengthening technological skills for manufacturing facilities.	EUR 500 mln
	• **Investment [M2C2] 5.2** supports innovative technologies for hydrogen storage, transport and transformation into derivates and e-fuels.	EUR 450 mln
	• **Investment [M2C2] 5.4** will support start-ups and venture capital active in the ecological transition by setting up a dedicated "Green Transition Fund" (GTF). The investment strategy will focused for instance on renewables, circular economy, mobility, energy efficiency, waste management and energy storage.	EUR 250 mln
	• **Investment: [M4C2]1.3.a and 1.3.b**, these measure fund partnerships including universities, research centers and companies to leverage fundamental research, strengthen national technology chains and promote their participation in strategic European and global value chains. The focus R&I areas are **climate change (1.3.a) circular economy (1.3.b**). Investments in human capital, basic research as well as activities aimed at citizen engagement are essential component of them.	EUR 966 mln
	• **Investment [M4C2] 1.4.a (climate change) and 1.4.b (circular economy)** aims at creating national research centres able to achieve a critical threshold of research and innovation capacity through collaboration of universities, research centres and companies. Key elements of each National Centre will be the creation and renewal of relevant research facilities, the involvement of private actors in the implementation and research projects and support to start-ups and spin-off, also in view of creating "national R&D leaders" on some Key Enabling Technologies.	EUR 720 mln
	• **Investment [M4C2] 2.1.b: IPCEI Green** will finance already approved and future IPCEI in specific industrial innovative green sectors in line with the European value chains already identified.	
	• **Investment [M4C2] 2.2.a: Partnerships in research and innovation** (Horizon Europe) will support research, development and innovation projects, identified with specific calls for participation in European Partnerships under Horizon Europe. These transnational research initiatives shall focus on the following partnerships: i) High Performance Computing, ii) Key digital technologies, iii) Clean energy transition; iv) Blue Oceans — A climate neutral, sustainable and productive blue economy; v) Innovative SMEs	EUR 600 mln EUR 120 mln
Digital	• **Investment [M1C2] 1.4** will support R&D tax credit for digital transformation of businesses by incentivizing private investment in assets and activities supporting. The measure is part of a broader Transition 4.0 Plan.	EUR 240 mln
	• **Investment [M1C2] 4.3**. **Space Factory** includes: (i) the specification, design and building of digital manufacturing, assembly and testing facilities for small satellites; (ii) Access to Space: research, development and prototyping for the realization of green technologies for future generation of thrusters and launchers, including in-flight demonstration of selected technologies.	EUR 235 mln
	• **Investment [M1C2] 4.4**. In-Orbit Economy consists of the implementation of a demonstrator for in orbit servicing technologies for	EUR 450 mln

	in orbit interoperability. The measure contributes to increase the national Space Surveillance and Tracking (SST) capacity and includes a network of ground-based sensors for the observation and tracking of space debris; design, development, commissioning of assets for the acquisition and management and provision of the data service in support of Space Traffic Management activities. • **Investment [M4C2]-I[I2.2.b] Partnerships in research and innovation – Horizon Europe_digital** will support research, development and innovation projects, identified with specific calls for participation in European Partnerships under Horizon Europe. These transnational research initiatives shall focus on the following partnerships: i) High Performance Computing, ii) Key digital technologies.	EUR 80 mln
Territorial Cohesion	• **Investment [M4C2] 1.5**, strengthens "innovation ecosystems for sustainability" and aims at building territorial leaders of R&D will fund among other actions the support to start-ups and spin off generation.	EUR 600 mln
Health	• **Investment [M4C2] 1.2** contains funding for research projects presented by young researchers. Health is one of the research topic. • **Investment [M6C2]- 2.1** includes strengthening and enhancing of the NHS biomedical research through two lines of intervention: (a) financing of Proof of Concept (PoC) projects supporting the development of technologies with a low degree of technological maturity, as well as fostering the transfer of technology towards the industry (b) funding of research programs in the field of rare diseases and rare cancers and other diseases with a high impact on health. • **Reform [M6C2] R1:** The approved reform reorganizes the network of Care and Research Institutes to improve NHS quality and excellence, and strengthen collaboration of these networks with companies, national and international partners. The reform includes measures to: i) better link research, innovation and healthcare and improving translational research; ii) improve the governance and introduce evidence-based criteria for the allocation of funds.	EUR 600 mln EUR 524 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Italian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda in particular to Action 4, 7, 8, 10, 11, 12 and 14 as well as to some of the flagships of the New European Innovation Agenda, notably Flagship 1, 3 and 4.

The R&I-related reforms concern specific aspects of the R&I system, rather than being systemic, namely the support to researchers' and managers' mobility, a simplification of researchers' contractual typology and the introduction of two-steps applications for research funding. The envisaged support to innovation ecosystems, through partnerships and multilayer activities is innovative for the Italian context. It is combined with investments to support industrial property-related projects of companies and research bodies and measures to strengthen the technology transfer offices. However, this promising knowledge exchange and collaboration approach, presents low levels of institutionalisation.

Action /	Description of the relevant RRP measures	Estimated

Flagship		investment[6]
European Research Area Policy Agenda		
ERA Action 4: Researchers and careers	• **Reform [M4C1] R4.1:** The reform aims at strengthening applied research by simplifying the procedures for the involvement of companies and research centers in Ph.D. programs**.** • **Reform [M4C2] R1.1:** The approved reform introduced two-steps application to research funding, enhanced the mobility of researcher and managers and streamlined career path of researchers. • **Investment M4C2]-I[I1.3.a]:** This investment will fund up to 2100 young researchers, along the lines of the European Research Council (ERC) and Marie Skłodowska-Curie Individual Fellowships (MSCA-IF) and Seal of Excellence, in order to enable them to gain an initial experience of research responsibility.	EUR 483 mln
ERA Action 7: Knowledge valorisation	• **Reform [M4C1] R4.1** The reform aims at strengthening applied research by simplifying the procedures for the involvement of companies and research centers in Ph.D. programs. • **Reform [M4C2] R1.1:** The approved reform introduced two steps application to research funding, enhanced the mobility of researcher and managers and streamlined career path of researchers. • **Reform [M6C2] R1:** The approved reform reorganize the network of IRCCS to improve NHS quality and excellence and strengthen the link between research, innovation and healthcare. • **Investment [M1C2] 6:** The measure supports industrial property-related projects of companies and research bodies, such as patent-related measures (Brevetti+), Proof of Concept (POC) programs and the strengthening of technology transfer offices (TTOs). • **Investment [M4C2]1.3.a, 1.3 b and 1.3c:** These measures fund partnerships including universities, research centers and companies to leverage fundamental research, strengthen national technology chains and promote their participation in strategic European and global value chains. Investments in human capital, basic research as well as activities aimed at citizen engagement are essential component of them. • **Investment [M4C2] 1.4.a (climate change), 1.4.b (circular economy) and 1.4.c (green and digital):** These measures aim at creating national research centres able to achieve a critical threshold of research and innovation capacity through collaboration of universities, research centres and companies. Key elements of each National Centre will be the creation and renewal of relevant research facilities, the involvement of private actors in the implementation and research projects and support to start-ups and spin-off, also in view of creating “national R&D leaders” on some Key Enabling Technologies. • **Investment [M4C2] 1.5:** This measure will establish and strengthen "innovation ecosystems for sustainability", and build "territorial leaders of R&D”. It includes innovative training activities aimed at reducing the mismatch between skills, industrial doctorates, research activities and/or research infrastructures, SMEs, support for start-ups, involvement of	EUR 30 mln EUR 1.610 mln EUR 960 mln EUR 1.300 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	local communities on innovation and sustainability issues. • **Investment [M4C2] 2.1.b: IPCEI_green** will focus on the involvement of private actors in research projects and support to research infrastructures carried out jointly by universities and enterprises, in particular SMEs, operating on the territory.	EUR 600 mln
ERA Action 8: Research infrastructures	• **Investment [M4C2] 1.4.a (climate change), 1.4.b (circular economy) and 1.4.c (green and digital):** These measures aim at creating national research centres able to achieve a critical threshold of research and innovation capacity through collaboration of universities, research centres and companies. Part of the investments will be allocated to the creation and renewal of relevant research facilities, also in view of creating "national R&D leaders" on some Key Enabling Technologies. • **Investment**. **[M4C2] 2.1.b: IPCEI_green** will focus on the involvement of private actors in research projects and support to research infrastructures carried out jointly by universities and enterprises, in particular SMEs, operating on the territory.	EUR 960 mln EUR 600 mln
ERA Action 10: Missions & Partnerships	**Investment [M4C2] 2.2.a.: Partnerships in research and innovation** (Horizon Europe) will support research, development and innovation projects, identified with specific calls for participation in European Partnerships under Horizon Europe. These transnational research initiatives shall focus on the following partnerships: i) High Performance Computing, ii) Key digital technologies, iii) Clean energy transition; iv) Blue Oceans — A climate neutral, sustainable and productive blue economy; v) Innovative SMEs.	EUR 200 mln
ERA Action 11: Energy	• **Investment [M2C2] 3.1.b:** The measure will re-use abandoned industrial areas to test units for hydrogen production from local RES plants located in industrial space and facilities located in Southern Italy. With measure **[M2C2] 3.3** 40 hydrogen-based refueling stations located at motorway service areas, logistic warehouses and ports will be set up. Finally, Investment **[M2C2] 3.4** will further contribute to building at least ten refuelling stations for railway based on hydrogen along six railway lines, near local green hydrogen production sites and/or motorway hydrogen refuelling stations. • **Investment [M2C2] 3.5** consists in supporting hydrogen R&D activities in Green and Clean Hydrogen production, storage, transport and transformation into derivates and e-fuels; Fuel Cells for stationary and mobility application; Integrated smart management systems to increase the resilience and reliability of intelligent hydrogen-based infrastructures. • **Investment [M2C2] 5.1.3** supports the development of a value chain in renewables and batteries by means of strengthening technological skills for manufacturing facilities. • **Investment [M2C2] 5.2** supports innovative technologies for hydrogen storage, transport and transformation into derivates and e-fuels. • **Investment [M2C2] 5.4** supports start-ups and venture capital active in the ecological transition by establishing dedicated "Green Transition Fund" (GTF) focused for instance on renewables, circular economy, mobility, energy efficiency, waste management and energy storage.	EUR 680 mln EUR 160 mln EUR 500 mln EUR 450 mln EUR 250 mln
ERA Action 12:	• **Investment [M1C2] 1.4** will support R&D tax credit for digital	EUR 2.008 mln

Green & Digital	transformation of businesses by incentivizing private investment in assets and activities supporting. The measure is part of a broader Transition 4.0 Plan.	
	• **Investment [M1C2] 4.1. SatCom initiative** will develop satellite connections aimed at developing the space sector, through services for secure communications and monitoring infrastructure, thus contributing to technology infrastructures.	EUR 385 mln
	• **Investment [M1C2] 4.2 Earth Observation** consists of (i) upstream activities: including specification, design, development of a constellation for remote sensing (Synthetic Aperture Radar (SAR), hyperspectral) and the procurement of launches focused on monitoring land, sea and atmosphere; (ii) downstream activities and the realization in Southern Italy of an incubator for EO applications and services.	EUR 417 mln
	• **Investment [M1C2] 4.3**. **Space Factory** includes: (i) the specification, design and building of digital manufacturing, assembly and testing facilities for small satellites; (ii) Access to Space: research, development and prototyping for the realization of green technologies for future generation of thrusters and launchers, including in-flight demonstration of selected technologies.	EUR 235 mln
	• **Investment [M1C2] 4.4**.: In-Orbit Economy consists of the implementation of a demonstrator for in orbit servicing technologies for in orbit interoperability. The measure contributes to increase the national Space Surveillance and Tracking (SST) capacity and includes a network of ground-based sensors for the observation and tracking of space debris; design, development, commissioning of assets for the acquisition and management and provision of the data service in support of Space Traffic Management activities.	EUR 450 mln
	• **Investment [M2C1] 2.3.a** and [**M2C1]2.3.b** and **[M2C1] 2.3.c** concern innovation and mechanization in the agricultural and food sectors and precision farming. They will support respectively enterprises for the mechanization in the agricultural and food sectors innovation in the circular economy and bio-economy. The supported investments are: replacement of more polluting off-road vehicles, introduction of precision farming and the replacement of more obsolete facilities for olive mills.	EUR 500 mln
	• **Investment [M2C2] 3.1.b** concerns the production of Hydrogen in brownfield sites (Hydrogen Valleys). The project has the objective of a re-use of abandoned industrial areas to testing units for hydrogen production from local RES plants located in the same industrial space and facilities or in neighbouring areas in Southern Italy.	EUR 150 mln
	• **Investment [M2C2] 3.3** concerns hydrogen testing for road transport and will create at least 40 hydrogen-based refueling stations located at motorway service areas, logistic warehouses and ports.	EUR 230 mln
	• **Investment [M2C2] 3.4** supports hydrogen testing for railway mobility. It will fund the building of at least ten refueling stations for railway based on hydrogen along six railway lines. The hydrogen train refueling stations will be realized near local green hydrogen production sites and/or motorway hydrogen refueling stations. The project shall involve support to R&D activities for hydrogen in railways starting from high-pressure electrolyser (TRL 5-7), high capacity storage system, also using metal hydride or liquids (TRL 3-5).	EUR 300 mln

	• **Investment [M2C2] 5.4** will support start-ups and venture capital active in the ecological transition by setting up a dedicated "Green Transition Fund" (GTF). The investment strategy will focused for instance on renewables, circular economy, mobility, energy efficiency, waste management and energy storage. • **Investment [M4C2] 1.2** provides funding for projects presented by young researchers will support scientific research in domains set out in the National Research Programme (PNR) 2021-2027 will fund research in green transition among which digital, industry, aerospace, climate, energy, sustainable mobility and environment. • **Investment: [M4C2]1.3.a, 1.3 b and 1.3c** These measures fund partnerships including universities, research centers and companies to leverage fundamental research, strengthen national technology chains and promote their participation in strategic European and global value chains. Topics are circular economy (1.3a), climate change (1.3 b) and all topics for measure 1.3c. Investments in human capital, basic research as well as activities aimed at citizen engagement are essential component of them. • **Investment [M4C2] 1.4.a (climate change), 1.4.b (circular economy) and 1.4.c (green and digital)** These measures aim at creating national research centres able to achieve a critical threshold of research and innovation capacity through collaboration of universities, research centres and companies. Key elements of each National Centre will be the creation and renewal of relevant research facilities, the involvement of private actors in the implementation and research projects and support to start-ups and spin-off, also in view of creating "national R&D leaders" on some Key Enabling Technologies linked to the green and digital transition.	EUR 250 mln EUR 600 mln EUR 1.610 mln EUR 960 mln
ERA Action 14: Citizen engagement	• **Investment: [M4C2]1.3.a, 1.3 b and 1.3c** These measure funds partnerships including universities, research centers and companies to leverage fundamental research, strengthen national technology chains and promote their participation in strategic European and global value chains. Investments in human capital, basic research as well as activities aimed at citizen engagement are essential component of them.	EUR 1.610 mln
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Investment [M2C2] 5.4** will support start-ups and venture capital active in the ecological transition by setting up a dedicated "Green Transition Fund" (GTF). The investment strategy will focused for instance on renewables, circular economy, mobility, energy efficiency, waste management and energy storage.	EUR 250 mln
Flagship 2:	• **Investment [M2C2] 3.1.b** The project has the objective of a re-use of abandoned industrial areas to testing units for hydrogen production from local RES plants located in the same industrial space and facilities or in neighbouring areas in Southern Italy.	EUR 150 mln
Flagship 3: Innovation ecosystems	• **Investment [M4C2]1.3.a, 1.3 b and 1.3c:** These measures fund partnerships including universities, research centers and companies to leverage fundamental research, strengthen national technology chains and promote their participation in strategic European and global value	EUR 1.610 mln

	chains. Investments in human capital, basic research as well as activities aimed at citizen engagement are essential component of them. • **Investment [M4C2] 1.4.a (climate change), 1.4.b (circular economy) 1.4.c (green and digital) and 1.4.d:** These measures aim at creating national research centres able to achieve a critical threshold of research and innovation capacity through collaboration of universities, research centres and companies. Key elements of each National Centre will be the creation and renewal of relevant research facilities, the involvement of private actors in the implementation and research projects and support to start-ups and spin-off, also in view of creating "national R&D leaders" on some Key Enabling Technologies. • **Investment [M4C2] 1.5** will establish and strengthen "innovation ecosystems for sustainability", and build "territorial leaders of R&D" (including innovative training activities aimed at reducing the mismatch between skills, industrial doctorates, research activities and/or research infrastructures, SMEs, support for start-ups, involvement of local communities on innovation and sustainability issues. • **Investment [M4C2] 2.1.b IPCEI Green** will focus on the involvement of private actors in research projects and support to research infrastructures carried out jointly by universities and enterprises, in particular SMEs, operating on the territory. • **Investment [M4C2] 2.2.a/b:** The objective of the measure is to support research, development and innovation projects, identified with specific calls for participation in European Partnerships under Horizon Europe.	EUR 1.600 mln EUR 1.300 mln EUR 600 mln EUR 200 mln
Flagship 4: Talents	• **Reform [M4C2]-R[R1.1]:** The reform supports mobility (through incentives) of high-profile individuals (such as: researchers and managers) between universities, research infrastructures and companies • **Investment [M4C2] 2.1.b IPCEI_green:** The measure consists among others of innovative training activities carried out in synergy by universities and businesses and aimed at reducing the mismatch between skills required by businesses and skills provided by universities, as well as industrial doctorates.	EUR 600 mln

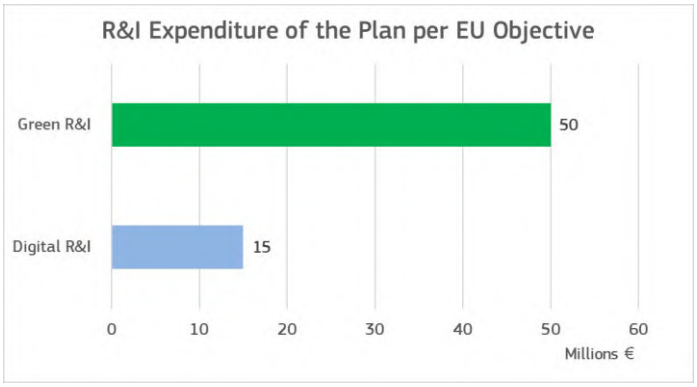
LITHUANIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 236,77 mln (i.e. about 11% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Lithuanian RRP to 1) key EU policy objectives (green, digital, health, cohesion, and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the twin transition is an important priority of the Lithuanian RRP. Investments in digital-related R&I represent around 12,3% of the overall R&I expenditure of the plan, while around 21,1% of the total R&I investments of the plan are directed towards green R&I areas.



Health is also very important to enable R&I. More specifically, support for health counts around 8,2%[4] of the overall R&I expenditure of the plan. It aims to strengthen advanced therapies and create medicinal products; and also supports the creation of sustainable unified national genomic medicine infrastructure and the development of national genomic reference data.

Key EU Objective[5]	Description of the relevant RRP measures	Estimated investment[6]

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

[5] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis and not included in the graph above.

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some

Green	• **Reform B13-B133:** This reform promotes the supply of construction products and services that speed up the renovation of buildings. Set up of operational automated new production lines of modular structures from organic material with a capacity of 750.000 m^2/year.	EUR 50 mln
Digital	• **Investment C14-C144a:** It will fund 14 contracts for business service centres to deploy robotics process automation and artificial intelligence solutions; and 170 contracts for start-ups and spin-offs to develop products and solutions for artificial intelligence, block chain technologies and robotics process automation.	EUR 15 mln
Territorial Cohesion	• **Reform E13-E131:** This reform is about the renewal of the Smart Specialisation Strategy. It shall identify three priorities for smart specialisation, and the thematic areas within these priorities, as well as a model for coordination and monitoring of implementation.	
Health	• **Reform A11-A118:** A sustainable unified national genomic medicine infrastructure shall be created: laboratory and computer equipment and at least 1570 completed sequencing tests performed to participate in the implementation of the EU cross-border project "Genome Europe". • **Reform A11-A117a:** An advanced therapy center will be established that will enable the preparation of advanced therapy medicinal products and ensure the provision of innovative cell therapy. • **Reform A11-A117b:** An advanced therapy center infrastructure design and construction works shall be completed, bought medical/laboratory and IT equipment, methodological guidelines and professional training completed, operating licenses obtained.	EUR 6,3 mln EUR 8,1 mln EUR 5,1 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Lithuanian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, especially to Actions 7, 8, 12 and 16. Almost a quarter of the whole investment into R&I will contribute to the flagships of the New European Innovation Agenda, in particular Flagship 2. Through its reforms and investments, Lithuania intends to promote research and innovation in digital and health sectors, while improving knowledge valorisation and ensuring access to excellence to both public and private stakeholders.

MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[7]
European Research Area Policy Agenda		
ERA Action 4: Researchers and careers	• **Reform E11-E113:** It will aim to attract foreign students and scientists, develop joint and double degree programmes and provide virtual services. It will provide 160 scholarships to foreign students.	EUR 14,5 mln
ERA Action 7: Knowledge valorisation	• **Investment C14-C145:** The establishment of an ICT centre of excellence is to develop and create links between business, academia and public authorities, to promote R&D for the development of technologies, products and services, to prepare them for the market and to foster the exchange of ideas, knowledge and investment. • **Reform E12-E121b:** It will fund a study on existing incentives for business to invest in R&D systems. • **Reform E13-E132:** Three mission-based science and innovation programmes shall be created, two excellence centres will be established in the areas of the smart specialisation, also to connect science and business, 21 R&D projects shall be funded.	EUR 14 mln EUR 0,07 mln EUR 63,7 mln
ERA Action 8: Research infrastructures	• **Reform A11-A118:** A sustainable unified national genomic medicine infrastructure shall be created: laboratory and computer equipment and at least 1570 completed sequencing tests performed to participate in the implementation of the EU cross-border project "Genome Europe". • **Reform A11-A117a:** An advanced therapy center will be established that will enable the preparation of advanced therapy medicinal products and ensure the provision of innovative cell therapy. • **Reform A11-A117b:** An advanced therapy center infrastructure design and construction works shall be completed, bought medical/laboratory and IT equipment, methodological guidelines and professional training completed, operating licenses obtained.	EUR 6,3 mln EUR 8,1 mln EUR 5,1 mln
ERA Action 12: Green & Digital	• **Investment C14-C145:** The establishment of an ICT centre of excellence aims to develop and create links between business, academia and public authorities, to promote R&D for the development of technologies, products and services, to prepare them for the market and to foster the exchange of ideas, knowledge and investment. • **Investment C14-C144a:** It will fund 14 contracts for business service centres to deploy robotics process automation and	EUR 14 mln EUR 15 mln

[7] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	artificial intelligence solutions; and 170 contracts for start-ups and spin-offs to develop products and solutions for artificial intelligence, block chain technologies and robotics process automation. • **Reform E12-E124:** It will fund 97 green product or technology development/deployment projects and 3 Industry Labs 4.0 to support circular economy and green transition in industry.	EUR 5 mln
ERA Action 16: Access to Excellence	• **Investment C14-C145:** The establishment of an ICT centre of excellence aims to develop and create links between business, academia and public authorities, to promote R&D for the development of technologies, products and services, to prepare them for the market and to foster the exchange of ideas, knowledge and investment. • **Investment C14-C144a:** It will fund 14 contracts for business service centres to deploy robotics process automation and artificial intelligence solutions; and 170 contracts for start-ups and spin-offs to develop products and solutions for artificial intelligence, block chain technologies and robotics process automation. • **Reform A11-A118:** A sustainable unified national genomic medicine infrastructure shall be created: laboratory and computer equipment and at least 1570 completed sequencing tests performed to participate in the implementation of the EU cross-border project "Genome Europe". • **Reform A11-A117a:** An advanced therapy center will be established that will enable the preparation of advanced therapy medicinal products and ensure the provision of innovative cell therapy. • **Reform A11-A117b:** An advanced therapy center infrastructure design and construction works shall be completed, bought medical/laboratory and IT equipment, methodological guidelines and professional training completed, operating licenses obtained. • **Reform E11-E113:** It will aim to attract foreign students and scientists, develop joint and double degree programmes, virtual services. It will provide 160 scholarships to foreign students. • **Reform E11-E114:** The creation of the science policy-implementing agency with aim to promote participation in R&I programs, to develop scientific competencies in the public sector and perform analytics of research and study processes. • **Reform E12-E124:** It will fund 97 green product or technology development/deployment projects and 3 Industry Labs 4.0 to support circular economy and green transition in industry. • **Reform E12-E121a:** This reform aims at creating a single Innovation Agency as a one-stop shop for all innovation services. • **Reform E13-E131:** This reform aims at renewing the Smart Specialisation Strategy. • **Reform E13-E132:** Three mission-based science and innovation programmes shall be created, two excellence centres will be	EUR 14 mln EUR 15 mln EUR 6,3 mln EUR 8,1 mln EUR 5,1 mln EUR 14,5 mln EUR 1,5 mln EUR 5 mln EUR 5 mln EUR 63,7 mln

	established in the areas of the smart specialisation, 21 R&D projects shall be funded.	
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Investment C14-C144a:** It will fund 14 contracts for financial services targeting business service centres to deploy robotics process automation and artificial intelligence solutions; and 170 contracts for start-ups and spin-offs to develop products and solutions for artificial intelligence, block chain technologies and robotics process automation.	EUR 15 mln
Flagship 2: Experimentation & Public procurement	• **Reform E12-E122:** It will fund 100 innovative public procurement projects.	EUR 8,5 mln
Flagship 3: Innovation ecosystems	• **Reform E13-E131/2:** It contains the renewal of Smart Specialisation Strategy. It shall identify three priorities for smart specialisation, and the thematic areas within these priorities, as well as a model for coordination and monitoring of implementation. • **Investment C14-C145:** The establishment of an ICT centre of excellence aims to develop and create links between business, academia and public authorities, to promote R&D for the development of technologies, products and services, to prepare them for the market and to foster the exchange of ideas, knowledge and investment. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 63,7 mln EUR 14 mln
Flagship 4: Talents	• **Reform E11-E113:** It will aim to attract foreign students and scientists, develop joint and double degree programmes, virtual services. It will provide 160 scholarships to foreign students.	EUR 14,5 mln

3. 'Innovative' policy instruments

- **Reform E12-E122:** It will fund 100 innovative public procurement projects to drive up demand for innovation in the country. Dedicated budget is about EUR 8,5 mln.

LUXEMBOURG

No RRF funds allocated to R&I[1].

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Luxembourg RRP to 1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Luxembourg RRP contains a measure on the development and deployment of test infrastructure and ultra-secure connectivity solutions. This measure is contributing to the data-based economy with EUR 10 mln and therefore to the digital transition of the EU[4].

Key EU Objective	Description of the relevant RRP measure
Digital	• **Investment C3A-I1:** The investment is for a new test infrastructure in the field of quantum technology-based communication. It will develop and deploy ultra-secure connectivity solutions within the data-based economy. • **Reform C3A-R1:** The reform is fostering the creation of a new technological ecosystem in Luxembourg. It will advance the digital transformation of the country.

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The component 3A of the Luxembourg RRP, which concerns the development of a quantum communication ecosystem in the country and is composed of one investment (EUR 10 mln) and one reform, may contribute to certain actions of the ERA Policy Agenda as well as certain areas of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures
European Research Area Policy Agenda	
ERA Action 4: Research Careers	• **Reform C3A-R1:** The reform will equip Luxembourg to train and attract a highly qualified workforce. The country can therefore benefit from and contribute to the ERA Talent Platform.

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.
[4] This investment has not been assigned to an R&I-related policy area in FENIX but has been considered as relevant in the context of this mapping exercise, which is why its potential contribution to key EU Objectives, the ERA Policy Agenda and the New European Innovation Agenda is described in this Fiche. However, it was not included in the investment totals reported in the cross-country (horizontal) analysis.

ERA Action 8: Research Infrastructures	• **Investment C3A-I1:** This new research infrastructure in the field of quantum technology-based communication can contribute to and be part of some of the activities, which are foreseen under ERA Policy Action 8 (e.g., analysis of the European research infrastructure landscape; broader and more sustainable access for all countries to European research infrastructures; increased cooperation between research infrastructures, e-infrastructures and stakeholders, including EOSC). • **Reform C3A-R1:** The reform could contribute to the gap analysis of the European research infrastructure landscape.
ERA Action 12: Accelerate the green/digital transition of Europe's key industrial ecosystems	• **Investment C3A-I1:** This measure will advance the digital transformation of LU, in line with the objective of Action 12 to accelerate the twin transition. It will also foster the participation of the private sector. • **Reform C3A-R1**: This measure will advance the digital transformation of LU, in line with the objective of Action 12 to accelerate the twin transition. It will also foster the participation of the private sector.
A New European Innovation Agenda	
Flagship 2: Framework conditions	• **Investment C3A-I1:** This measure being an innovation infrastructure could benefit from the new rule allowing Member States to grant aid for the construction and upgrade of testing and experimentation infrastructures. • **Reform C3A-R1:** This measure being an innovation infrastructure could benefit from the new rule allowing Member States to grant aid for the construction and upgrade of testing and experimentation infrastructures.
Flagship 3: Innovation ecosystems	• **Investment C3A-I1:** This measure will develop an ecosystem on quantum communication infrastructure in LU and to connect it with other ecosystems at EU level through the EuroQCI project. • **Reform C3A-R1:** The reform could contribute to *Innospace* as it supports the establishment of a new ecosystem-based quantum technology.
Flagship 4 Deep Tech Talents	• **Reform C3A-R1:** The reform will equip Luxembourg to train and attract a highly qualified workforce and can therefore profit from actions foreseen in Flagship 4 e.g., through the Digital Europe programme.

LATVIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 198 mln (i.e. about 10,82% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Latvian RRP to (1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]), (2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Latvian RRP contains investments for public health research. In response to the COVID-19 pandemic, Latvia channels EUR 715.000 into research to support its preparedness for future epidemic risks through three studies as port of Investment 4.1.1.1.i. The studies cover antimicrobial resistance, reasons for non-vaccination and the impact of epidemics on the Latvian public health systems. The analyses will feed into public health policy and pandemic preparedness.

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Latvian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, and, albeit to a lesser extent, to some of the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[4]
European Research Area Policy Agenda		
ERA Action 4: Researchers and careers	• **Reform 5.2.1.R**: The reform envisages developing a new and unified career model for academic and scientific staff in line with best global practice, promoting the attraction and retention of global staff, especially the diaspora in Latvia.	
ERA Action 7: Knowledge valorisation	• **Investment 5.1.1.1.I:** The investment aims to promote knowledge transfer within the economy,	EUR 4,6 mln
ERA Action 13: Universities	• **Reform 5.2.1.R**: Major changes to the governance of the higher education system and its funding is foreseen under this measure. • **Investment 5.2.1.1.I**: Investment to support the restructuring of the higher education system	EUR 82,5 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of the Country Fiche under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of the Country Fiche.

[4] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

ERA Action 16: Access to Excellence	• **Reform 5.1.R**: The reform seeks to make the Latvian governance of the Latvian innovation system more efficient and dynamic and to create an infrastructure appealing for private investments, thus it will improve the countries access to excellence. • **Reform 5.2.1.R**: The improved higher education governance aims to create a more appealing academic career model and boost Latvia's talent pool. • **Investment 5.1.1.1.I**: Human resources (about 19 employees) will be mobilised and multiple analytical report will be published to modernise governance of the Latvian innovation system. • **Investment 5.1.1.2.I**: 6 innovation clusters are planned to be set up around the thematic areas of the Smart Specialisation strategy. The clusters shall contribute to the more coordinated innovation ecosystem. • **Investment 5.2.1.1.I**: Grants will support the structural changes foreseen under measure 5.2.1.R. This includes consolidation grants and grants for doctoral students, post-doctoral researchers and professors.	EUR 4,6 mln EUR 109 mln EUR 82.5 mln
A New European Innovation Agenda		
Flagship 3: Innovation ecosystems	• **Reform 5.2.1.R**: Major changes to the governance of the higher education system and its funding is foreseen under this measure It shall boost academic research and provide the necessary highly-skilled talent to the Latvian R&I ecosystem. • **Investment 5.1.1.1.I**: Human resources (about 19 employees) will be mobilised and multiple analytical report will be published to modernise governance of the Latvian innovation ecosystem. • **Investment 5.1.1.2.I**: 6 innovation clusters are planned to be set up around the thematic areas of the Smart Specialisation strategy. The clusters shall contribute to the more coordinated innovation ecosystem. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 4.69 mln EUR 109 mln
Flagship 4: Talents	• **Reform 5.2.1.R**: The improved higher education governance aims to create a more appealing academic career model and boost Latvia's talent pool.	

MALTA

No targeted RRF funds allocated to R&I[1]:

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Maltese RRP to 1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Maltese RRP does not foresee any R&I related investment; however, it includes the adoption of the Malta's smart specialisation strategy 2021-2027, which sets the priorities and focus areas for the years to come in the area of Research and Innovation.

The six smart specialisation areas identified in the strategy are in line with EU priorities, in particular concerning the green and digital transition and guaranteeing health care of European citizens:

1. Health and Well-being;
2. Sustainable Use of Resources for Climate Change Mitigation and Adaptation;
3. Smart Manufacturing;
4. Marine & Maritime Technology;
5. Aviation and Aerospace;
6. Future Digital Technologies.

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The strategy is an opportunity to refocus Malta's priorities in line with economic developments as well as national challenges and it identifies, in addition to the six priority areas, the key initiatives on which the country will invest. The strategy will therefore contribute to ERA Policy Agenda, especially to Action 16 which aims at improving access to excellence and foster innovation cohesion across Europe.

Action / Flagship	Description of the relevant RRP measures
ERA Action 16: Access to Excellence	**MT-C[C3]-R[R2]:** The strategy aims at strengthening the overall R&I system of Malta by identifying six thematic areas in which the country needs to invest and by encouraging public-private cooperation to transform research results into market-ready solutions.

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

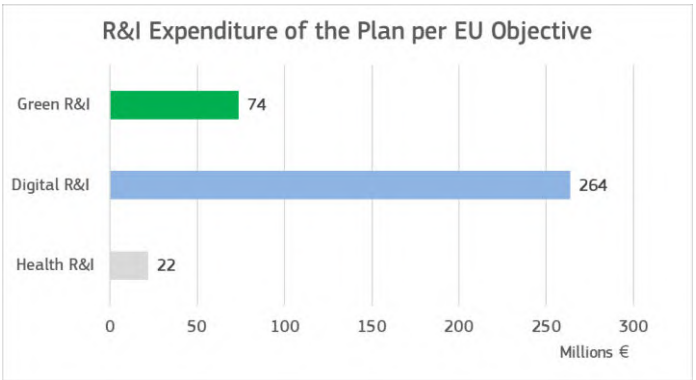
THE NETHERLANDS

Estimated amount of RRF funds allocated to R&I[1]: **EUR 472 mln (i.e. about 10% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Dutch RRP to 1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

Mobilising R&I for the twin transition is key a priority of the Netherlands RRP. Together they amount to almost 100% of the overall R&I investments of the plan. R&I expenditure towards digital-related R&I areas represents 68,57%, the dimension with the highest amount of funds in the entire plan. The green investment in R&I represents 31,43% of the overall R&I investments. The plan also includes investment aiming at developing an integrated national health data infrastructure.



Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C1.1.I1[6]:** This investment aims to increase the capacity of wind power generation in the North Sea. Particularly	EUR 130,7 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.
[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.
[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	R&I relevant is the second sub measure that includes research projects on possible actions to strengthen the North Sea ecosystem and conservation of species and designation of Birds Directive sites within the Natura 2000 sites**.** • **Investment C1.1.I2:** This investment aims to accelerate and scale up the development of a green hydrogen ecosystem in the Netherlands by (1) constructing at least two demonstration facilities for innovative green hydrogen technologies to demonstrate the feasibility of large-scale electrolysis and green hydrogen deployment (2) implementing at least three research projects focusing on the production, storage, transport and use of green hydrogen and (3) developing a human capital agenda with actions to increase the supply of skills in green hydrogen. • **Investment C1.1.I3[7]:** This measure aims at deploying fully electric and thus zero-emission inland waterway transport (vessels) thus contributing to the green transition. • **Investment C1.1.I4:** This investment aims at making the Dutch aviation sector sustainable, with a view to achieving fully climate-neutral Dutch aviation by 2050, by removing bottlenecks related to the scale-up of technologies for the use of hydrogen as an energy carrier in aircrafts.	EUR 63,7 mln EUR 56 mln EUR 10 mln
Digital	• **Investment C2.1.I1:** Quantum Delta NL investment programme aims to (1) accelerate the development of applications of quantum technology, (2) develop, attract and retain talent and (3) stimulate the development and establishment of new companies in the field of quantum technology in the Netherlands. • **Investment C2.1.I2[8]:** AI Ned and applied AI learning communities objective is to develop and exploit the potential of AI for the Dutch economy and society. The investment aims to address bottlenecks limiting the widespread application of AI solutions, such as slow speed of innovation, limited breadth of the knowledge base, low supply of AI training in the labour market, limited involvement of the wider society and lack of data exchange solutions. • **Investment C2.1.I3[9]:** The goal of Digital education impulse programme is to exploit digitalisation for vocational and higher education and to improve students' and teachers' digital skills. The investment aims at bringing together vocational and higher education institutions to achieve a standardised, secure and reliable sectoral ICT infrastructure and a sectoral knowledge infrastructure.	EUR 263,9 mln EUR 59,8 mln EUR 209 mln
Health	• **Investment C5.1.I4:** The objective of this investment is to stimulate innovation in life sciences and the healthcare sector by	EUR 22 mln

[6] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.
[7] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.
[8] Ibid.
[9] Ibid.

	standardising and connecting data among the Health Research Infrastructures (Health RI) consortium. The investment aims at developing an integrated national health data infrastructure, removing social and organisational barriers through agreement between public and private stakeholders, and creating a central point for data issuance.	

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Dutch RRP are expected to contribute significantly to key actions of the ERA Policy Agenda., and, albeit to a lesser extent, to two flagships of the New European Innovation Agenda

Action / Flagship	Description of the relevant RRP measures	Estimated investment[10]
European Research Area Policy Agenda		
ERA Action 1: European Open Science Cloud	• **Investment C5.1.I4:** Financial support is provided for the adoption of a road map for secondary use of health data, which shall specify the steps to be taken by university medical centers to ensure that their health data can be located, accessed, exchanged and reused, and the operationalisation of a first version of the data portal for locating and accessing health data.	EUR 22 mln
ERA Action 7: Knowledge Valorisation	• **Investment C1.1.I2:** The human capital agenda aims to ensure sufficient supply of skilled staff and exchange of knowledge between relevant parties. The agenda will be developed based on insights from experts from both companies and research and educational institutions. • **Investment C2.1.I2:** The investment consists in 4 grants for R&D projects on AI applications; and 6 Applied AI Learning Communities with the aim of strengthening the links between universities/students and SMEs.	EUR 4,8 mln EUR 15,85 mln
ERA Action 8: Research Infrastructures	• **Investment C2.1.I3:** The investment aims at bringing together vocational and higher education institutions to achieve a standardised, secure and reliable sectoral ICT infrastructure and a sectoral knowledge infrastructure. • **Investment C5.1.I4:** The investment aims at developing an integrated national health data infrastructure and operationalisation of a support system for researchers.	EUR 209 mln EUR 22 mln
ERA Action 10: Missions &	• **Investment C1.1.I4:** Programme line 2A includes this investment which is going to seek synergies in funding with	EUR 10 mln

[10] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

Partnerships	existing programmes, such as Clean Aviation partnership, Horizon Europe, national and international tenders.	
ERA Action 11: Energy	• **Investment C1.1.I2:** This investment aims at the construction of at least two demonstration facilities for innovative green hydrogen technologies to demonstrate the feasibility of large-scale electrolysis and green hydrogen deployment. The investment also supports a 7-line-research programme focusing on the production, storage, transport and use of green hydrogen. • **Investment C1.1.I4:** Programme line 2A and 2B aim to remove bottlenecks related to the scale-up of technologies for the use of hydrogen as an energy carrier in aircrafts contribution to the green transition.	EUR 63,7 mln EUR 18,7 mln
ERA Action 12: Green & Digital	• **Investment C1.1.I1:** The investment includes research projects on possible actions to strengthen the North Sea ecosystem and conservation of species and designation of Birds Directive sites within the Natura 2000 sites. • **Investment C1.1.I3:** This measure aims at deploying fully electric and thus zero-emission inland waterway transport (vessels) thus contributing to the green transition. • **Investment C1.1.I2:** The human capital agenda aims to ensure sufficient supply of skilled staff and exchange of knowledge between relevant parties. The agenda will be developed based on insights from experts from both companies and research and educational institutions. • **Investment C1.1.I4:** Part of the investment is structurally addressing challenges of climate neutral flying in 2050 and defines industry-wide research and technology development. • **Investment C2.1.I1:** This investment programme aims to (i) accelerate the development of applications of quantum technology, (ii) develop, attract and retain talent and (iii) stimulate the development and establishment of new companies in the field of quantum technology in the Netherlands.	EUR 137,5 mln EUR 56 mln EUR 4,8 mln EUR 10 mln EUR 263,9 mln
ERA Action 13: Higher Education Institutions	• **Investment C2.1.I3**[9]**:** The goal of this investment programme is to exploit digitalisation for vocational and higher education and to improve students' and teachers' digital skills. The investment aims at bringing together vocational and higher education institutions to achieve a standardised, secure and reliable sectoral ICT infrastructure.	EUR 209 mln
A New European Innovation Agenda		
Flagship 3: Innovation ecosystems	• **Investment C1.1.I4:** This investment is going to seek synergies in funding with existing programmes, such as Clean Aviation partnership, Horizon Europe, national and international tenders. • **Investment C2.1.I2:** AiNed programme focuses on strengthening synergies between 7 regional (partial) ecosystems, the national ecosystem and international ecosystems.	EUR 10 mln EUR 44 mln
Flagship 4 Deep Tech Talents	• **Investment C1.1.I2:** Human capital agenda of this investment aims to ensure sufficient supply of skilled staff and exchange of knowledge between relevant parties. The agenda will be developed based on insights from experts from both companies and research and educational institutions.	EUR 4,8 mln

	• **Investment C2.1.I1:** This investment programme aims to (1) accelerate the development of applications of quantum technology, (2) develop, attract and retain talent and (3) stimulate the development and establishment of new companies in the field of quantum technology in the Netherlands. • **Investment C2.1.I2:** The investment supports: (1) development of methods for deploying trustworthy and human-centric AI systems and (2) grants for the appointment of doctoral and postdoctoral researchers in the field of AI. The investment consists in 4 grants for R&D projects on AI applications; and 6 Applied AI Learning Communities with the aim of strengthening the links between universities/students and SMEs.	EUR 263,9 mln EUR 59,8 mln

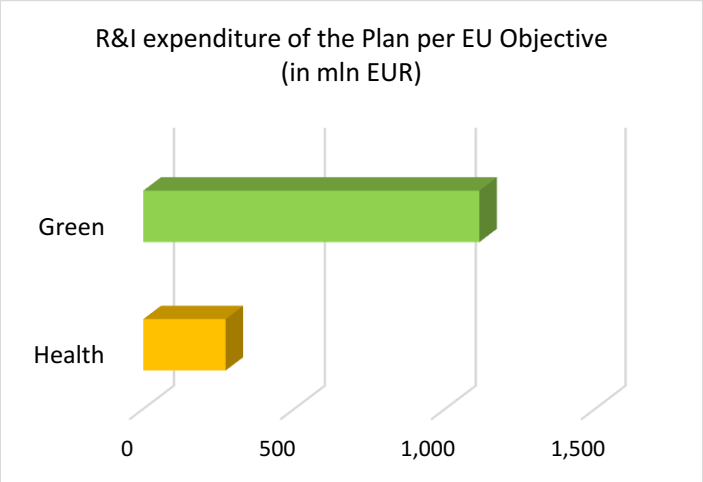
POLAND

Estimated amount of RRF funds allocated to R&I[1]: **EUR 2.04 bn (i.e. about 5.8% of the RRP).**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Polish RRP to 1) key EU policy objectives (green, digital, health, cohesion, and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the green transition is a key priority of the Polish RRP. More than half of the overall R&I investment of the Plan is targeting the green transition. This will be supported by reforms for the development of hydrogen and decarbonised gases.



Investments in R&I for Health is also an important dimension of the plan. It represents 13.6% of the overall R&I investments and the reforms are planning to strengthen the national health system in its whole and its research capacity.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment PL-C[E]-I[1.1.1]:** This investment aims at increasing	EUR 1 114 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	the capacities of companies to produce low- and zero-carbon solutions, therefore, pushing them at developing new, innovative solutions. • **Investment PL-C[B]-I[2.1.1][6]:** Its goal is to create a Polish hydrogen industry and increase the use of renewable and low-carbon hydrogen which includes advancing, testing, demonstrating and commercializing different and new types of hydrogen fuel cell transport units. • **Reform PL-C[B]-R[2.1]:** By improving conditions for the development of hydrogen and other decarbonized gases, this reforms aims directly at facilitating R&I in those domains and supporting the green transition. • **Reform PL-C[A]-R[2.2]:** This measure aims to support R&D infrastructure to develop technologies linked to the circular economy.	EUR 800 mln
Digital	• **Investment PL-C[A]-I[2.1.1][7]:** The objective of this investment shall be to support projects involving the introduction of innovative solutions aimed at the digital transformation. • **Investment PL-C[C]-I[2.1.1][8]:** The increase in the use of e-services and digital processes and the provision of a model support system for innovative solutions will support projects resulting in new solutions. • **Reform PL-C[C]-R[2.1][9]:** The reform will support R&I in the digital sectors by supporting the scaling-up of digital application that will act as demonstrators.	EUR 450 mln EUR 420 mln
Health	• **Investment PL-C[D]-I[3.1.1]:** Establishing facilities to develop research in medical sciences will benefit the knowledge of practitioners, the development of new treatments and improve the quality of the health system overall. • **Reform PL-C[D]-R[3.1]:** By supporting the overall Polish R&D&I potential in the health sector, Poland shall develop innovative solutions and support its health system with spillovers effects.	EUR 273 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

[6] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

[7] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis. However, in the case of investments or reform-related costs, these are not included in the investment totals reported in the chart above and in the cross-country (horizontal) analysis.

[8] Ibid.

[9] Ibid.

The R&I-related measures of the Polish RRP are expected to contribute substantially to key actions of the ERA Policy Agenda, especially to Action 8 on the green and digital transition and Action 16 on improve access to excellence. Additionally, it contributes to the New European Innovation Agenda via an investment targeting the flagship on Experimentation & Public procurement.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[10]
European Research Area Policy Agenda		
ERA Action 7: Knowledge valorisation	• **Reform PL-C[A]-R[2.4]:** Cooperation between science and industry will include information flows and increase the uptake of research results, thus valorizing them. • **Reform PL-C[A]-R[2.5][11]:** This reform is among others, about developing concepts for the cooperation and the knowledge and skills transfer between the cultural and creative sectors and with science, education, technology and businesses thus strengthening knowledge valorization • **Investment PL-C[A]-I[2.4.1]**: This investment aims at strengthening collaboration between research and businesses by increasing the availability of excellent research infrastructures in key areas • **Investment PL-C[A]-I[2.5.1][12]:** By supporting exchanges between cultural and creative industries and industries from other sectors, this investment is expected to strengthen links and knowledge flows, including in making use of disruptive technologies.	EUR 490 mln EUR 45 mln
ERA Action 8: Research infrastructures	• **Reform PL-C[A]-R[2.2]:** This reforms includes support to R&I infrastructures to develop technologies linked to circular economy, this includes, for example a legal framework on the circularity of raw materials. • **Reform PL-C[A]-R[2.4]:** This reform will amongst others, aim at establishing rules for the use of research infrastructures, increasing their effectiveness. • **Investment PL-C[A]-I[2.4.1]**: This investment target research infrastructures to develop research capacities for science-business collaboration.	EUR 490 mln

[10] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

[11] This measure was not assigned to an R&I-related policy area in FENIX but was considered relevant for the purpose of the analysis.

[12] Ibid.

ERA Action 11: Energy	• **Reform PL-C[B]-R[2.1]:** This reform targets directly the development of hydrogen technologies, therefore developing new technologies strengthening the energy in Poland. • **Investment PL-C[B]-I[2.1.1]**[13]: One of the objectives of this investment is to act on the whole hydrogen chain by demonstrating new technologies.	EUR 800 mln
ERA Action 12: Green & Digital	• **Reform PL-C[A]-R[2.2]:** This reform will encourage R&I as by creating the condition for a transition toward circular economy, it will open this area to innovative project demonstration and testing. • **Reform PL-C[B]-R[2.1]:** It aims at improving the conditions for the development of hydrogen technologies and other decarbonised gases **Reform PL-C[A]-R[2.1]**[14]**:** By enhancing the conditions for the development of hydrogen Poland will encourage R&I in this domain and strengthen R&I in favour of the green transition. • **Investment PL-C[A]-I[2.1.1]**[15]: This investment will foster R&I in these domains as it will increase the demand for new solutions. • **Investment PL-C[B]-I[2.1.1]**[16]**:** It will encourage R&I in the hydrogen sector as there will be a need to develop new solutions as demand will increase and technologies will also need to be scale-up.	EUR 450 mln EUR 800 mln
ERA Action 16: Access to Excellence	• **Reform PL-C[A]-R[2.4]:** Through improving science-business collaboration, this measure will also contribute to fostering access to excellence by exchanging practices. • **Reform PL-C[B]-R[2.1]:** Through the improvement of the conditions, Poland will be able to improve conditions for R&I more generally, for example through cross-sectoral best practices. • **Reform PL-C[D]-R[3.1]:** The creation of appropriate research facilities will improve the quality of research, therefore directly improve excellence. • **Reform PL-C[A]-R[2.1]**[17]**:** This reform is expected to strengthen Polish businesses and their ability to innovate in the digital sphere and in other domains. It is also expected to improve the quality of research infrastructures. • **Investment PL-C[A]-I[2.4.1]**: The investment in research infrastructures is expected to increase the quality of research	EUR 490 mln

[13] Ibid.
[14] Ibid.
[15] Ibid.
[16] Ibid.
[17] The reform PL-C[A]-I[2.1] is not assigned to any R&I-related policy area in the FENIX database, but has been considered as relevant for the purpose of this analysis..

	and attract excellent researchers, improving the overall Polish R&I system. • **Investment PL-C[D]-I[3.1.1]:** By investing in a comprehensive manner in the research in the medical and health sectors, this will increase the quality of research in Poland made in these sectors. • **Investment PL-C[B]-I[2.1.1][18]:** Through this investment, the country will create the know-how that is critical to lead in future technologies and create excellence center for these technologies that will attract other excellent researchers.	EUR 273 mln EUR 800 mln
A New European Innovation Agenda		
Flagship 2: Experimentation & Public procurement	• **Investment PL-C[D]-I[3.1.1]:** This investment shall support activities linked to experimentation spaces as it foreseen to create incubators in the biomedical sectors and this know-how is expected to also benefit other sectors.	EUR 273 mln
Flagship 3: Innovation ecosystems	*Measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	

[18] The investment PL-C[B]-I[2.1.1] is not assigned to any R&I-related policy area in the FENIX database, but has been considered as relevant for the purpose of this analysis.

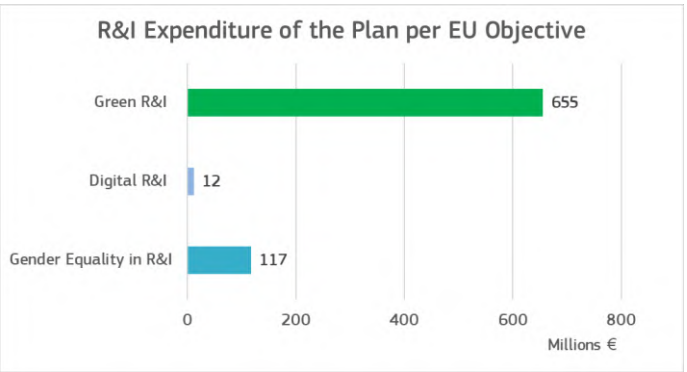
PORTUGAL

Estimated amount of RRF funds allocated to R&I[1]: **EUR 1,53 bn (i.e. about 9% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Portuguese RRP to 1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Portugal is committed to foster the twin transition through the resources of the RRP.



In the R&I domain, the investments of the Portuguese RRP focuses especially on delivering the green transition. The "green expenditure" amounts to 42.81% of the total R&I expenditure**.** Indeed, different measures aim to tackle adaptation to climate change, reduction of emissions and carbon footprint and promotion of the circular economy. Some of these investments are also sectorial and are targeting specific sectors such as agriculture, fisheries, clothing and footwear.

The Portuguese plan does not foreseen R&I investment targeting health and territorial cohesion; however, a reform in the agricultural sector has among its objectives to promote cohesion of rural territories and healthy food choices.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C5.I1.02:** The objective of this investment is to invest in the green transition, by launching specific calls for projects for business-academia consortia. • **Investment C5.I2.1:** The investment aims to improve business academia linkages by supporting "Interface" entities and Collaborative	EUR 372 mln EUR 82 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	laboratories. The intervention fields of the entities supported will be contributing to the green transition. • **Investment C5.I3.1/2:** The investment wants to promote sustainable agriculture and shall fund projects on the low carbon economy, resilience and adaptation to climate change, through reducing emissions, increasing carbon sequestration, or strengthening the resilience and adaptation to climate change. • **Investment C12.I1.1:** The objective of the investment is to support the incorporation of bio-based materials in production processes in three sectors: textile and clothing, footwear and natural resin. • **Reform C5.R12:** The objective of the reform is to strengthen the agricultural sector in Portugal. Among its goals, there is the promotion, the development and integration of R&I targeted to the needs of the agricultural sector with a view to reaching the green transition.	EUR 81 mln EUR 120 mln
Digital	• **Investment C5.I3.3:** The investment is aimed at promoting the digital transformation of the agri-food sector. • **Reform C5.R12:** The objective of the reform is to strengthen the agricultural sector in Portugal. Among the objectives, there is also the promotion the development and integration of R&I targeted to the needs of the agricultural sector with a view to reaching the digital transition.	EUR 12 mln
Territorial Cohesion	• **Reform C5.R12:** One of the strategic axis of the reform is to strengthen the socio-economic fabric of rural territories.	
Health	• **Reform C5.R12:** One of the objectives of the reform is to contribute to health and well-being, by increasing the level of accession to the Mediterranean Diet by 20 %.	

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Portuguese RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, in particular to Action 7, 10 and 16 and, albeit to a lesser extent, to one of the flagships of the New European Innovation Agenda, notably Flagship 3.

As demonstrated by the two key R&I related reforms; in its plan Portugal put special attention to increasing the stability of funding and to promoting stronger public-private collaboration to foster technology transfer.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

ERA Action 5: Gender equality	• **Investment C5.I3.1:** The investment will implement reform RE-r12: Research and innovation agenda for sustainable agriculture, food and agro-industry, which among its objectives has inclusivity and gender equality in the farming sector. • **Investment C5.I3.2:** The investment will implement reform RE-r12: Research and innovation agenda for sustainable agriculture, food and agro-industry, which among its objectives has inclusivity and gender equality in the farming sector. • **Investment C10.I1.1:** Through the development of the Blue Hub School, the investment has also the aim to promote gender equality in maritime activities. • **Investment C10.I1.3:** Through the development of the Blue Hub School, the investment has also the aim to promote gender equality in maritime activities. • **Reform C5.R12:** The reform has among its objectives to ensure diversity, equality and intergenerationality in the agricultural sector. The aim is to involve more young people and women.	EUR 45 mln EUR 36 mln EUR 1,41 mln EUR 34,72 mln
ERA Action 7: Knowledge valorisation	• **Investment C5.I1.01:** The objective of this investment is to mobilise and strengthen Portugal's scientific and technological capabilities via the deployment of ambitious research and innovation agendas based on business-academia consortia. • **Investment C5.I1.02:** The objective of this investment is to mobilise and strengthen Portugal's scientific and technological capabilities via the deployment of ambitious research and innovation agendas based on business-academia consortia. • **Investment C5.I2.1:** The investment aims to improve business academia linkages to ensure an efficient technology transfer and the translation of research results into innovation. • **Investment C5.I2.2:** The investment aims to improve business academia linkages to ensure an efficient technology transfer and the translation of research results into innovation. • **Investment C10.I1.3:** The investment aims to foster the capacity to transfer research results into productive specialisations in the blue economy, across various clusters in Portugal. • **Reform C5.R11:** The objective of the reform is to improve academia-business linkages in order to enhance knowledge flows and technology transfer.	EUR 558 mln EUR 372 mln EUR 82 mln EUR 104 mln EUR 34,72 mln
ERA Action 8: Research infrastructures	• **Investment C10.I3.1:** The investment is aimed at the construction of a multifunctional naval platform for ocean monitoring, oceanographic research, monitoring of the sea ecology. Renovation of existing buildings and structures, facilities for computer and communication systems for the creation of an operations center. • **Investment C10.I4-RAA.1:** Objective to upgrade the fixed and mobile infrastructure of marine science research in the Autonomous Region of the Azores. • **Investment C10.I4-RAA.2:** The investment foresees the creation of an experimental research and development centre linked to the sea.	EUR 110 mln EUR 18,29 mln EUR 13,71 mln

ERA Action 12: Green & Digital	• **Investment C5.I1.02:** The objective of this investment is to invest in the green transition, by launching specific calls for projects for business-academia consortia. • **Investment C5.I3.1:** The investment shall fund projects on the low carbon economy, resilience and adaptation to climate change, through reducing emissions, increasing carbon sequestration, or strengthening the resilience and adaptation to climate change. • **Investment C5.I3.2:** The investment shall support digitalisation projects in the agriculture sector. • **Investment C10.I2:** The objective of this investment is to support the financing of projects aimed at innovation, process modernisation, carbon footprint reduction and the circular economy of fish industry and organisations. • **Investment C12.I1.1:** The objective of the investment is to support the incorporation of bio-based materials in production processes in three sectors: textile and clothing, footwear and natural resin. The investment shall be implemented by supporting programme contracts with consortia, which shall include R&I institutions, businesses and end-users. • **Reform C5.R12:** The objective of the reform is to strengthen the agricultural sector in Portugal. Among the objectives, there is also the promotion the development and integration of R&I targeted to the needs of the agricultural sector with a view to reaching the green and digital transition	EUR 372 mln EUR 45 mln EUR 36 mln EUR 21 mln EUR 120 mln
ERA Action 16: Access to Excellence	In the plan, there are two horizontal reforms which will contribute to strengthen the Portuguese R&I system: • **Reform C5.R9:** The reform will strengthen the overall R&I system by ensuring better conditions for more efficient and more effective public and private R&D investment. • **Reform C5.R11:** The reform will strengthen the overall R&I system by promoting stronger public-private collaboration. In addition, several investments will contribute to strengthen the R&I system by funding specific projects for business-academia consortia, promoting technology transfer and fostering knowledge valorisation, making the economy more resilient to climate change and ensuring the appropriate digital infrastructures and instruments to key sectors like agriculture, fisheries, blue economy and bioeconomy: • **Investment C5.I1.01 –** Agendas for business innovation, • **Investment C5.I1.02 –** Green agendas for business innovation, • **Investment C5.I2.1 –** Interface mission, • **Investment C5.I2.2 –** Interface mission, • **Investment C5.I3.1 –** Agenda for sustainable agriculture, • **Investment C5.I3.2 –** Agenda for sustainable agriculture, • **Investment C5.I3.3 -** Agenda for sustainable agriculture, • **Investment C10.I1.1 -** Blue Hub, • **Investment C10.I1.3 –** Blue Hub, • **Investment C10.I2 -** Green and Digital Transition in Fisheries, • **Investment C10.I3.1 -** Atlantic defence operations centre, • **Investment C12.I1.1 -** Bioeconomy**.**	EUR 558 mln EUR 372 mln EUR 82 mln EUR 104 mln EUR 45 mln EUR 36 mln EUR 12 mln EUR 1,41 mln EUR 34,72 mln EUR 21 mln EUR 110 mln EUR 120 mln

A New European Innovation Agenda		
Flagship 3: Innovation ecosystems	• **Investment C5.I3.3:** The investment aims to foster an innovation ecosystem in agriculture and food by the renewing/upgrading the scientific infrastructure and equipment of laboratories in the sector. • **Investment C10.I1.3:** The investment aims to create a nation-wide network of infrastructures for the blue economy across the country and to strengthen the blue economy innovation ecosystem. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 12 mln EUR 34,72 mln

ROMANIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 314,43 mln (i.e. 1,08% of RRP)**
This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Romanian RRP to 1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

In general, the Romanian RRP prioritised measures aiming at structurally strengthening the R&I system as a whole. The only measure related to the key objectives is the investment C5.I4.3 for Green R&I. The measure entails the investment of EUR 5 mln on projects related to circular economy and increased energy efficiency of historic buildings.

A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Romanian RRP are expected to contribute to key actions of the ERA Policy Agenda., and predominantly ERA Action 16, as well as, to two of the flagships of the New European Innovation Agenda

Action / Flagship	Description of the relevant RRP measures	Estimated investment[4]
European Research Area Policy Agenda		
ERA Action 3: Research assessment	• **Reform C9.R2:** The objective of the reform is to streamline the governance of the Romanian R&I system also by establishing a permanent system evaluating R&I policy across ministries and agencies. • **Reform C9.R5:** The objective of this reform is to increase the performance and consolidation of the public research, development and innovation organisations in Romanian and their integration into the European Research Area by introducing a periodic external evaluation of all RDI institutes.	EUR 3,43 mln
ERA Action 4: Researchers and careers	• **Investment C9.I9:** The objective of this investment is to increase the attractiveness of research careers and of support excellent researchers in carryng out their research project. • **Investment C9.I10:** The objective of the investment is to	EUR 8 mln EUR 4 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.
[4] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

	promote research careers and studies while developing citizens' interest for research. • **Reform C.9.R3:** The objective of this reform is to increase the attractiveness of research careers and the performance of researchers.	
ERA Action 7: Knowledge valorisation	• **Investment C9.I5:** The measure aims to foster public and private cooperation and the established competence center should also contribute to the dissemination of research results. • **Reform C9.R4:** The objective of the reform is to increase the cooperation between businesses and public research organisations and to create a favorable environment for public and private investments in the sector.	EUR 25 mln
ERA Action 8: Research infrastructures	• **Investment C9.I5:** The five "Centres of Competence" which will be set up to contribute to the implementation of the EU Missions at national level shall also use resources to upgrade shared research equipment and infrastructures.	EUR 25 mln
ERA Action 10: Missions & Partnerships	• **Investment C9.I5:** The investment aims to create five centres of competence to facilitate the implementation of each EU Mission at national level. • **Investment C9.I7:** The investment provides complementary funding to RDI projects that are already contracted in the context of green or digital European Partnerships.	EUR 25 mln EUR 31 mln
ERA Action 14: Citizen engagement	• **Investment C9.I10:** The objective of this investment is to promote research careers and attract pupils, students for performing research activities and develop citizen interest for research.	EUR 4 mln
ERA Action 16: Access to Excellence	• **Investment C9.I5:** The objective of the investment is to tackle the thematic fragmentation of research, development and innovation organizations in Romania by supporting the implementation of Horizon Europe missions at national level • **Investment C9.I6:** The measure aims to grant 500 vouchers to researchers who have applied for the Horizon Europe programme and have passed the eligibility phase • **Investment C9.I7:** The investment aims to strengthen excellence and increase the success rates of applications for Horizon Europe . • **Investment C9.I8:** The objective of this investment is to increase the research capacity of research development and innovation organisations. • **Investment C9.I9:** The objective of this investment is to increase the attractiveness of research careers and of support confirmed researchers in carryng out their research project. • **Investment C9.10:** The eight regional career guidance centres shall work as a network and become one single entry point for research careers and link research career orientation activities with an educational programme focused on science with and for society, while also promoting Romanian research results, and raising awareness about science benefits in the society.	EUR 25 mln EUR 5 mln EUR 31 mln EUR 183 mln EUR 8 mln EUR 4 mln EUR 3,43 mln

	• **Reform C9.R2:** The objective of the reform is to clarify and streamline the governance of the research, development and innovation system in Romania. • **Reform C.9.R3:** The objective of this reform is to increase the attractiveness of research careers and the performance of researchers. • **Reform C9.R4:** The objective of the reform is to increase the cooperation between businesses and public research organisations and to create a favourable environment for public and private investments in the sector. • **Reform C9.R5:** The objective of the reform is to increase the performance and consolidation of the public research, development and innovation organisations in Romania and their integration into the European Research Area.	
A New European Innovation Agenda		
Flagship 3: Innovation ecosystems	• **Investment C9.I7:** The measure shall grant complementary funding to research, development and innovation projects that are already contracted in the context of green or digital European research development and innovation Partnerships. • **Investment C9.I9:** The objective of this investment is to increase the attractiveness of research careers and of support confirmed researchers in carrying out their research projects. • **Reform C9.R2:** The objective of the reform is to clarify and streamline the governance of the research, development and innovation system in Romania. • **Reform C9.R5:** The objective of the reform is to increase the performance and consolidation of the public research, development and innovation organisations in Romania and their integration into the European Research Area *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 31 mln EUR 8 mln EUR 3,43 mln
Flagship 4: Talents	• **Investment C9.I8**: The objective of this investment is to increase the research capacity of the research development and innovation organisation by granting funding to 100 research projects led by top international researchers.	EUR 183 mln

SWEDEN

Estimated amount of RRF funds allocated to R&I[1]: **EUR 286.42mn (i.e. about 8.7% of the RRP)**
This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Swedish RRP to (1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]) and (2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Swedish RRP contains R&I investment for the green transition. I**nvestments in green R&I represent around 8.7% of the overall expenditure of the plan.** The aim of this investment shall be to provide financial support in the form of grants for investments, research, feasibility studies, pilot projects, and demonstration projects to help the industry to transition towards zero net emissions of greenhouse gases. It shall finance projects that develop, demonstrate and implement new technology with zero, low or negative emissions of greenhouse gases in industries with high process emissions. No direct linkage with other relevant key EU objectives was identified.

Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment CA.I2.1:** The Action supports industrial R&I for the green transition. It focuses on R&I processes, technology transfer and cooperation between enterprises focusing on the low carbon.	EUR 243 mln
	• **Investment CA.I2.2:** The Action supports industrial R&I for the green transition. It focuses on R&I processes, technology transfer and cooperation between enterprises focusing on circular economy.	EUR 42,9 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of the Country Fiche under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of the Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

The R&I-related measures of the Swedish RRP are expected to contribute significantly to a key action of the ERA Policy Agenda. No direct connection between the measures of the Swedish RRP and a specific flagship under the New European Innovation Agenda was found.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 12: Green & Digital	• **Investment SE-C[A]-I[I2.1]:** The Action supports industrial R&I for the green transition. It focuses on R&I processes, technology transfer and cooperation between enterprises focusing on the low carbon. • **Investment SE-C[A]-I[I2.2]:** The Action supports industrial R&I for the green transition. It focuses on R&I processes, technology transfer and cooperation between enterprises focusing on circular economy.	EUR 243 mln EUR 42,9 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

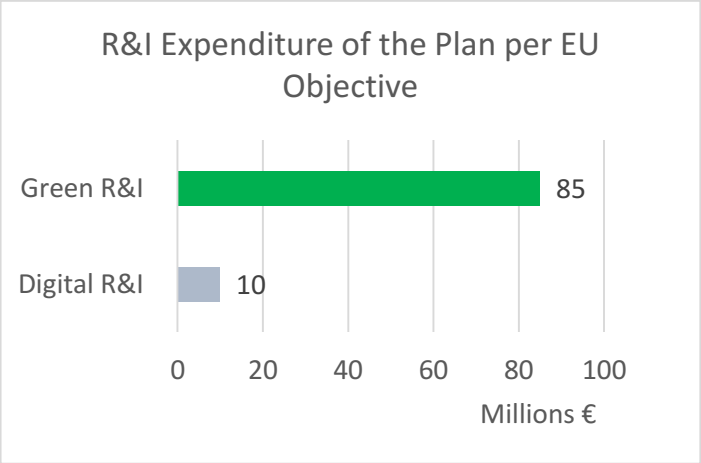
SLOVENIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 138 mln (i.e. about 5.5% of the RRP)**

This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Slovenian RRP to 1) key EU policy objectives (green, digital, health, cohesion, and gender equality[2]) and 2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments in the RRP (3)[3].

1. Key EU Objectives

Mobilising R&I for the green transition is a key priority of the Slovenian RRP. Investments in green R&I represent around 60% of the overall R&I expenditure of the plan. Digital-related R&I areas are also present in the plan with over 7% of the total R&I investments directed to them.



Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).

[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of this document under ERA Action 5 (Gender Equality).

[3] In case relevant measures were identified, they can be found in Section 3 of this Country Fiche.

[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.

[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I

Green	• **Investment SI-C[C8]-I[IB.a]** A call is foreseen to support research projects in the field of low carbon economy, resilience and adaptation to climate change both at early stage (TRL 3-6) and at more mature stages (TRL 6-9). • **Investment SI-C[C8]-I[IB.c]**: A call is foreseen to support research, technology transfer and business-to-business cooperation focusing on the circular economy both at early stage (TRL 3-6) and at more mature stages (TRL 6-9). • **Investment SI-C[C8]-I[ID]:** Calls for proposals will open to support demonstration and pilot projects in the field of circular economy.	EUR 10 mln EUR 45 mln EUR 30 mln
Digital	• **Investments SI-C[C6]-I[ID-F]**: Three cross-border and multi-country projects are included on European common data infrastructure and services, Low-Power Processors and Semiconductor Chips and European Blockchain Services Infrastructure • **Investment SI-C[C8]-I[IB.b]**: A call is foreseen to support research on digitalisation and digital trans-formations both at early stage (TRL 3-6) and at more mature stages (TRL 6-9)	EUR 0 EUR 10 mln

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The R&I-related measures of the Slovenian RRP are expected to contribute significantly to key actions of the ERA Policy Agenda, and, albeit to a lesser extent, to some of the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 3: Research assessment	• **Reform SI-C[C8]-R[RA]:** The new Act on Scientific Research and Innovation introduces new competitive funding for research organisations. The law updates and modernizes the assessment of research organization and permanent employees.	EUR 14.7 mln

expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

ERA Action 4: Researchers and careers	• **Reform SI-C[C8]-R[RA]**: The new Act on Scientific Research and Innovation stabilises researcher's salary and promotes SI researchers' international mobility and encourages their return. • **Investment SI-C[C8]-I[IC]**: Investments are assigned to fund Slovenian researchers who did not receive funding from Marie Skłodowska-Curie Action due to lack of budget and to reintegrate researchers after the completion of Marie Skłodowska-Curie Action grants.	EUR 14.7 mln EUR 17.2 mln
ERA Action 7: Knowledge valorisation	• **Reform SI-C[C8]-R[RA]:** This reform aims at promoting knowledge flows and academia-business cooperation. • **Investment SI-C[C8]-I[IB.a-c]:** Three calls are foreseen to support research projects in the field of green and digital transition both at early stage (TRL 3-6) and at more mature stages (TRL 6-9). • **Investment SI-C[C8]-I[ID]:** Calls for proposals will open to projects supporting research and innovation processes, technology transfer and cooperation between businesses in the field of circular economy. • **Investment SI-C[C8]-I[IE]:** The measure establishes the National Food Institute that shall support RDI and transfer of knowledge and innovation in the field of food supply and development.	EUR 14.7 mln EUR 65 mln EUR 30 mln EUR 5.3 mln
ERA Action 8: Research infrastructures	• **Investment SI-C[C8]-I[IE]:** The investment consists of establishing an operational institution for RDI and transfer of knowledge and innovation in the field of food supply and development and research infrastructure in the food sector	EUR 5.3 mln
ERA Action 11: Energy	• **Investment SI-C[C8]-I[IB.a]:** A call is foreseen to support research projects in the field of low carbon economy, resilience and adaptation to climate change both at early stage (TRL 3-6) and at more mature stages (TRL 6-9). • **Investment SI-C[C8]-I[IB.c]**: A call is foreseen to support research, technology transfer and business-to-business cooperation focusing on the circular economy both at early stage (TRL	EUR 10 mln EUR 45 mln

	3-6) and at more mature stages (TRL 6-9).	
ERA Action 12: Green & Digital	• **Investments SI-C[C6]-I[ID-F]**: Three cross-border and multi-country projects are included on European common data infrastructure and services, Low-Power Processors and Semiconductor Chips and European Blockchain Services Infrastructure. • **Investment SI-C[C8]-I[IB.a-c]:** Three calls are foreseen to support research projects in the field of green and digital transition both at early stage (TRL 3-6) and at more mature stages (TRL 6-9). • **Investment SI-C[C8]-I[ID]:** Calls for proposals will open to support demonstration and pilot projects in the field of circular economy.	EUR 0 EUR 65 mln EUR 30 mln
ERA Action 16: Access to Excellence	• **Reform SI-C[C8]-R[RA]:** The new Act on Scientific Research and Innovation reforms the governance of the Slovenian R&I system. • **Investments SI-C[C6]-I[ID-F]**: Three cross-border and multi-country projects are included on European common data infrastructure and services, Low-Power Processors and Semiconductor Chips and European Blockchain Services Infrastructure • **Investment SI-C[C8]-I[IB.a-c]:** Three calls are foreseen to support research projects in the field of green and digital transition both at early stage (TRL 3-6) and at more mature stages (TRL 6-9). • **Investment SI-C[C8]-I[IC]**: Investments are assigned to fund Slovenian researchers who did not receive funding from Marie Skłodowska-Curie Action due to lack of budget and to reintegrate researchers after the completion of Marie Skłodowska-Curie Action grants. • **Investment SI-C[C8]-I[ID]:** Calls for proposals will open to support demonstration and pilot projects in the field of circular economy and hence contributing to Slovenia's innovation performance • **Investment SI-C[C8]-I[IE]:** The investment consists of establishing an operational institution for RDI and transfer of knowledge	EUR 14.7 mln EUR 0 EUR 65 mln EUR 17.2 mln EUR 30 mln EUR 5.3 mln

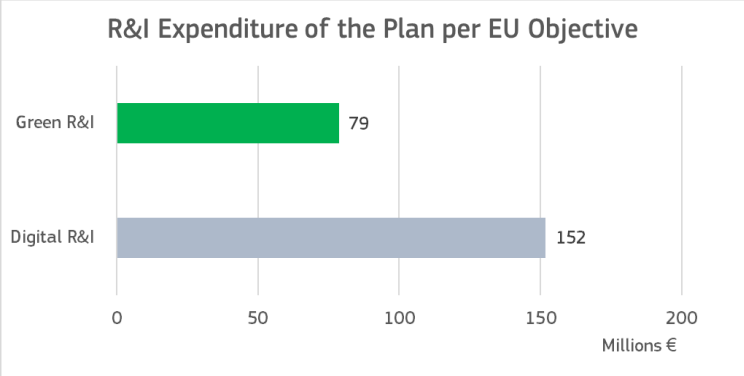
	and innovation in the field of food supply and development and research infrastructure in the food sector	
A New European Innovation Agenda		
Flagship 2: Experimentation & Public procurement	• **Investments SI-C[C6]-I[IF]:** Slovenia will participate in multi-country project on European Blockchain Services Infrastructure. Through the participation, Slovenia will strengthen digital testing and experimental spaces.	EUR 0
Flagship 3: Innovation ecosystems	• **Investments SI-C[C6]-I[ID-F]:** Slovenia will participate in multi-country project on European Common data infrastructure, low-power processors and semiconductor chips and European Blockchain Services Infrastructure hence is contributing to the European digital innovation ecosystem. • **Investment SI-C[C8]-I[ID]:** Calls for proposals will open to support demonstration and pilot projects in the field of circular economy. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 0 EUR 30 mln
Flagship 4: Talents	• **Reform SI-C[C8]-R[RA]:** The new Act on Scientific Research and Innovation reforms research careers and aims to improve talent management. • **Investment SI-C[C8]-I[IC]**: Investments are assigned to fund Slovenian researchers who did not receive funding from Marie Skłodowska-Curie Action due to lack of budget and to reintegrate researchers after the completion of Marie Skłodowska-Curie Action grants. This measure will strengthen the Slovenian innovation talent pool.	EUR 14.7 mln EUR 17.2 mln

SLOVAKIA

Estimated amount of RRF funds allocated to R&I[1]: **EUR 793 mln (i.e. 12.5% of the RRP)**
This Country Fiche presents the results of a mapping exercise which was carried out to assess the potential contribution of the R&I-related measures of the Slovak RRP to (1) key EU policy objectives (green, digital, health, cohesion, gender equality[2]), (2) a new EU R&I policy framework, while also trying to detect the possible use of 'innovative' policy instruments[3] in the RRP (3).

1. Key EU Objectives

The Slovak RRP is rich in terms of R&I reforms as well as investments. Investment in **digital** R&I represent about **20%** of the overall R&I expenditure of the plan, while around **10%** of the total R&I investments of the plan are directed towards **green-related areas.**



Key EU Objective[4]	Description of the relevant RRP measures	Estimated investment[5]
Green	• **Investment C9.I4** This scheme aims to support the green transition as well as resilience and adaptation to climate change in line with thematic priorities of Horizon Europe (carbon free energy, electrification, hydrogen, battery technologies and alternative fuels, etc).	EUR 78,7 mln
Digital	• **Investment C9.I5** This investment aims at supporting research and innovation for the digitalisation of the economy. • **Investment C9.I2.b** This measure aims at supporting cooperation between companies, academia and R&D organisations on digital-related aspects. • **Investments C17.I5.a** and **C17.I5b** are dedicated to fast grants hackathons	EUR 134,1 mln EUR 14 mln EUR 3,8 mln

[1] The estimated expenditure is based on the FENIX methodology used for the Recovery & Resilience Scoreboard and corresponds to the measures allocated to the policy areas "R&D&I in green activities", "Digital-related measures in R&D&I" and "R&D&I" as primary or secondary policy areas. An analysis of the R&I measures of the first 22 approved RRPs is available in the Scoreboard (link).
[2] In case relevant measures for gender equality were identified, they can be found in Section 2 of the Country Fiche under ERA Action 5 (Gender Equality).
[3] In case relevant measures were identified, they can be found in Section 3 of the Country Fiche.
[4] The data on Green and Digital R&I was taken from the FENIX database, considering only those measures that were assigned to the 'Green R&D&I' and 'Digital R&D&I' policy areas (either as primary or secondary policy areas). Instead, the data on Health and Cohesion was obtained based on DG R&I's own analysis.
[5] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

2. A new EU R&I policy framework: the ERA Policy Agenda and the New European Innovation Agenda

The Slovak RRP includes a very rich and diversified set of R&I-related measures which have the potential to contribute to many actions of the ERA Policy Agenda, as well as to the flagships of the New European Innovation Agenda.

Action / Flagship	Description of the relevant RRP measures	Estimated investment[6]
European Research Area Policy Agenda		
ERA Action 3: Research assessment	• **Reform C8.R2.b** This reform includes the preparation of a new methodology for assessing scientific performance and its introduction into the legal system. The assessment panel shall consist of domestic and foreign excellent researchers and the evaluation shall be based on high quality assessment systems from abroad.	EUR 2,64 mln
ERA Action 4: Researchers and careers	• **Investment C9.I2.a** This investment should include a scheme supporting traineeships of doctoral students and staff between enterprises and academic research organisations, including joint leadership of doctoral candidates. It is expected that at least 1000 traineeships will be financed by Q2/2026. • **Investment C9.I3** This investment aims at supporting scientific research careers through scholarships and grants and at creating an internationally competitive environment for scientists, both in terms of salaries and the availability of attractive schemes (scholarships for excellent researchers, early-stage grants, capital boosters, support to excellent teams in strategically dedicated areas). • **Investment C10.I4**[7] The RRP text describes this investment as supporting the systemic development of internationalisation as a tool to increase the quality and openness of universities and research institutions. International mobility of students, higher education teachers, researchers and international networking of Slovak universities will be promoted.	EUR 164,6 mln EUR 146,3 mln EUR 18,7 mln
ERA Action 7: Knowledge valorisation	• **Reform C9.R2** this reform includes regulatory changes to incentivise academia-business collaboration. It aims at completing the transformation of the Slovak Academy of Science (SAS) into a public organisation to enable stimulating multi-source funding and cooperation with the private sector. The reform shall be enabled by a small revision of the two legislative acts (this revision is completed). • **Investment C9.I2.a** This investment e.g. includes voucher schemes to facilitate the transfer of knowledge, technologies and innovation (incl. patent voucher or innovation voucher). It should also support at least two transformative and innovative consortia which shall generate new RDI projects in key sectors of the economy (smart	EUR 164,6 mln

[6] One investment can potentially be linked to multiple EU Objectives, ERA Policy Actions and NEIA Flagships. Therefore, the total amount (accumulation of all investments in this table) will be higher compared to the overall R&I expenditure of the country and needs to be seen as an indication. Costs linked to reforms (only applicable in some MS) are mentioned as an estimated investment, but they are not included in the investment totals reported in the cross-country (horizontal) analysis.

[7] The investment C10.I4 is not assigned to the R&I related policy area in the FENIX database but has been considered as relevant for the purpose of this analysis.

	technologies, green technologies).	
ERA Action 10: Missions & Partnerships	• **Investment C17.I3.b** The RRP specifies that the services of this supercomputer have the ambition to be delivered within the framework of the EuroHPC Joint Undertaking to all Participating States. The launch of a new supercomputer of world parameters in Slovakia stimulates the creation of a sustainable ecosystem consisting of manufacturers and distributors of value-added components, hardware, software and services. • **Investment C9.I1** The RRP mentions that this investment should enable greater participation of Slovak institutions in Horizon Europe research and innovation partnerships, the European Research Area (ERA-Net) and other Horizon 2020 initiatives.	EUR 85,1 mln EUR 46,5 mln
ERA Action 11: Energy	• **Investment C9.I2.a** The investment should also support at least two transformative and innovative consortia which shall generate new RDI projects in key sectors of the economy (smart technologies, green technologies). • **Investment C9.I4** This scheme aims to support the green transition, resilience and adaptation to climate change in line with thematic priorities of Horizon Europe (carbon free energy, electrification, hydrogen, battery technologies and alternative fuels, etc.).	EUR 164,6 mln EUR 78,7 mln
ERA Action 12: Green & Digital	• **Investment C17.I3.b** This investment is expected to support support technology infrastructures. It foresees the launch of a new supercomputer of world parameters in Slovakia to stimulate the creation of a sustainable ecosystem consisting of manufacturers and distributors of value-added components, hardware, software and services. • **Investment C9.I5** The investment aims at supporting the transition to the digital economy in topics in line with Horizon Europe thematic priorities (key digital and industrial technologies, internet of things, AI, robotics).	EUR 85,1 mln EUR 134,1 mln
ERA Action 13: Universities	• **Reform C8.R1** This reform at improving the performance of SK public universities (introduction of performance-based funding: performance contracts). Those are introduced to support the profiling and diversification of universities based on their specific strengths and potential for development. • **Reform C8.R2.b** The objective of this reform is to set out the new standards and criteria for the accreditation of curricula that tighten the conditions for guaranteeing and delivering study programmes, improve their quality and introduce long-term quality monitoring processes. Five academics with high-quality scientific outputs are needed for accreditation and implementation of a student-centered education system. • **Reform C8.R4** This reform, via the amendment to the Higher Education Act, shall increase the power of rector and the Board of Directors so that it better reflect responsibility and allow greater flexibility within the higher education institution. The recruitment of university management posts (rector, dean of faculty) shall be professionalized and shall take the form of open competitions or public hearings. In addition, the experts shall be able to participate in open competitions for tenures.	

	• **Reform C8.R5** The objective of the reform is to promote the consolidation of universities into larger units (Slovakia has over 30 universities with fragmented research capacities). The Ministry of Education shall approve a road map for two large units of higher education institutions and subsequently for the next group of universities.	
ERA Action 16: Access to Excellence	• **Reform C8.R1** The objective of the reform is to set out the new standards and criteria for the accreditation of curricula that tighten the conditions for guaranteeing and delivering study programmes. • **Reform C8.R2.b** The reform introduces performance evaluation in order to increase the efficiency and effectiveness of HEs and PROs. • **Reform C8.R3** The reform wants to achieve better quality of higher education in Slovakia which should help to halt brain drain. • **Reform C8.R4** The reform among others promotes the openness of the academic environment towards both professional and foreign candidates and thus has the potential to allow greater internationalisation of universities. • **Reform C8.R5** The objective of the reform is to promote the bringing together of universities into larger units and thus pooling fragmented research capacities and improve insufficient cooperation with business. • **Reform C9.R1** The component 9 and its key reform 1 aims at strengthening RDI performance and innovation potential, which are a necessary prerequisite for competitive and sustainable economic growth. This reform mainly rationalises governance structures: it focuses on the amendment of the RDI relevant legislation, which shall enhance the RDI governance structure, strengthen and professionalise inter-ministerial coordination of RDI policies. • **Reform C9.R1** aims at completing the transformation of the Slovak Academy of Science (SAS) into a public organisation to enable stimulating multi-source funding and cooperation with the private sector. The reform shall be enabled by a small revision of the two legislative acts (this revision is completed). • **Investment C17.I3.b** aims at building excellent capacities in the field of research and deployment of digital technologies (launch of a new supercomputer). • **Investment C17.I4.a** includes support for projects aiming at the development and application of top digital technologies. • **Investment C9.I1** aims at supporting excellent projects and thus better dispersing of excellent knowledge and technologies. • **Investment C9.I2a** This investment aims to mobilise private participation in RDI and increase the share of innovative businesses, especially in the area of digital innovation. It shall support a wider role of the private sector, capacity building as well as networking with research organisations. • **Investment C9.I3** This investment aims at supporting scientific research careers through scholarships and grants, creating an internationally competitive environment for the best scientists. • **Investment C9.I4** This scheme aims to support the green transition, resilience and adaptation to climate change in line with thematic	EUR 2,64 mln EUR 85,1 mln EUR 73,5 mln EUR 46,5 mln EUR 164,6 mln EUR 146,3 mln EUR 78,7 mln

	priorities of Horizon Europe. • **Investment C9.I5** This investment aims at supporting the transition to the digital economy in topics in line with Horizon Europe thematic priorities (key digital and industrial technologies, internet of things, AI, robotics). • **Investment C10.I4**[8] This investment aims at supporting the internationalisation of higher education institutions and research organisations and thus has the potential to increase their R&D performance towards excellence.	EUR 134,1 mln EUR 18,7 mln
A New European Innovation Agenda		
Flagship 1: Access to finance	• **Investment C9.I6:** This investment includes financial instruments to support innovation. The objective is to invest through financial intermediaries in companies with significant technological and innovation potential. The capital investment shall cover an early stage (seed phase) as well as the growth phase (such as VC funds).	EUR 42,5 mln
Flagship 2: Experimentation & Public procurement	• **Investment C17.I4.a** This investment can support the construction of testing and experimental infrastructure (eligibility under agreed scheme).	EUR 73,5 mln
Flagship 3: Innovation ecosystems	• **Investment C17.I3.b** The CID foresees participation in two other multi-country European projects, to be identified from a pre-defined list of multi-country projects put forward by the European Commission (participation in EuroHPC initiatives). As regards Investment 3 in general SK intends to seek financing for some of those projects from other sources, in particular from directly managed EU programmes (Digital Europe, Connecting Europe Facility, Horizon Europe). • **Investment C17.I4.a** The investment shall also serve as a co-funding mechanism for projects that succeed in directly managed EU programmes (Digital Europe, Horizon Europe and the Connecting Europe Facility). Priority shall be given to successful projects based on an IPCEI assessment by the European Commission. • **Investment C9.I1** The investment aims to support number of Seals of Excellence thus strengthens synergies between different EU funding streams. *In addition, measures relevant to ERA Action 16 (see further above) can be considered as relevant to this Flagship.*	EUR 85,1 mln EUR 73,5 mln EUR 46,5 mln
Flagship 4: Talents	• **Investment C9.I2.a** This investment should include schemes supporting traineeships of doctoral students and staff between enterprises and academic research organisations, including joint leadership of doctoral candidates. It is expected that at least 1000 traineeships are financed by Q2/2026.	EUR 164,6 mln

[8] The investment C10-I4 is not assigned to a R&I-related policy area in the FENIX database but has been considered as relevant for the purpose of this analysis.