

The digital pillar of the Greek Recovery and Resilience Plan – Potential impact on competitiveness and industrial policies

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PromethEUs The logo for PromethEUs. The word 'PromethEUs' is written in a bold, sans-serif font. 'Prometh' is in dark blue, 'EU' is in yellow, and 's' is in dark blue. To the right of the text is a stylized blue figure of a person holding a smartphone. The smartphone screen shows a yellow flame icon.

- **The Greek RRP in a snapshot**
- Priorities and objectives of the digital pillar
- The digital pillar and DESI performance
- Implementation during the first year
- Discussion of findings



Greek RRP total **financing envelope**

- €30.5 bn (17% of GDP)
- Grants: ~€18 bn (58% of total)
- Loans: ~€12.5 bn (42% of total)

175 measures divided into 18 components

- **67 reforms** (38% of total)
- **108 investments** (62% of total)

331 milestones and targets

- 37.5% Climate target
- 23.3% Digital target

Estimates on economic impact

- Min. Finance: Total investments directly related to RRP >€60bn
- Central Bank: Growth rate boost by 0.7-1.1 ppt per annum

The Greek RRP's four pillars

Pillar 1: Green transition
(€6.2 bn in grants)

Pillar 2: Digital transformation
(€2.2 bn in grants)

Pillar 3: Employment, **skills** and cohesion
(€5.2 bn in grants)

Pillar 4: Private investment and **transformation** of the economy
(€4.8 bn in grants)

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The target of digital transformation will be mainly pursued through reforms and investments in the following components

- Component 2.1: Enhancing connectivity for citizens, businesses and the State
 - Component 2.2: Supporting the digital transformation of the State
 - Component 2.3: Supporting the digital transformation of businesses
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- As the Regulation COM (2020) 408 sets a binding target of **at least 20%** of the Plan's total budget allocation to contribute to the digital transition or to the challenges resulting from it, this priority will be supported also by reforms and investments in the context of the rest of the pillars and components of the Greek RRP. The aforementioned binding target also concerns the loans that will be granted by the RRF.
 - Reforms and investments in other 11 components of the Greek RRP that partially or indirectly affect digitization, mainly in pillars 3 and 4.
 - The estimated cost of investments solely under the Digital Transition pillar of the Greek RRP is €2,338 million, of which €2,177 million (93.1%) is covered by the RRF.
 - Taking together the overall budget of the Greek RRP financed by the RRF (€18.0 billion in grants and €12.5 billion in loans) and the spending "threshold" for contributing to digital transition, at least €6.1 billion of the RRP should be headed towards investments –also- for this purpose.

Component 2.1. Enhancing connectivity for citizens, businesses and the State

- **Indicative Reforms:** 1) Transition to 100/200 Mbps (UltraFast) broadband connections and strengthening of Superfast Broadband demand, 2) Transition to 5G technology
- **Indicative Investments:** 1) Fiber optic infrastructure in buildings, 2) Submarine fibre cable and 3) 5G Corridors – 5G networks that will provide coverage of all Greek motorways that are part of the Trans-European Transport Networks. **Overall budget:** €582 million, of which €522 million (90%) are covered by the RRF

Component 2.2. Supporting the digital transformation of the State

- **Indicative Reforms:** 1) Interconnection and interoperability of registries, systems and services for data exchange between public organizations, 2) Strengthening of “customer”-oriented services, through simplification of processes, as well as related digital systems' enhancements, 3) New technologies for improving Public Administration's services, increase their efficiency and reduce systems' maintenance and upgrade costs, 4) Cybersecurity strategy and policies for the Public Sector and 5) Data Governance strategy & policies for the Public Sector
- **Indicative Investments:** 1) Interoperability and web services development, 2) e-Registries, 3) CRM for General Government, 4) New system for Public Procurements, 5) Central Document Management System, 6) Modernization of Public Administration's One-Stop Shops, 7) Digital skills upgrade programs for conscripts, 8) Supply of Central Cloud Computing Infrastructure and Services, 9) Upgrade of Cloud-computing infrastructure and services of the National Infrastructures for Research and Technology. **Overall budget:** €1,281 million, fully covered by the RRF

Component 2.3. Supporting the digital transformation of businesses

- **Indicative Reforms:** Establishment of a digital business ecosystem and introduction of tax incentives for the facilitation of the SMEs digital transformation
- **Indicative Investments:** Digital Transformation of SMEs. **Overall budget:** €475 million, of which €375 million (79%) are covered by the RRF

Reforms-investments for improving competitiveness

- The vast majority of the planned reforms and investments under the “Digital Transformation” pillar concern the public sector, in order to catch up with the global technological developments, the policy recommendations of the EU (about the operational model of the State, the provision of qualitative services to citizens and businesses etc., Table 1)
- The **difference in the budget allocation** among the business sector and the public sector, is **less pronounced** than that in the number of reforms and investments (Table 2), thus providing significant support to both of them.

Table 1. Distribution of reforms/investments under the “Digital Transformation” pillar, per type of sector of the economy concerned*

	Reforms	Investments
Business sector	5	12
Public sector	7	22
Citizens	4	7

*In case a reform/investment concerns more than one sector, it is counted for all the sectors concerned
Source: IOBE

Table 2. Distribution of investment budget under the “Digital Transformation” pillar, per type of sector of the economy mainly concerned*

	Investment Budget (mil. €/ % of total)
Business sector	864 (40.4%)
Public sector	1,035 (48.5%)
Citizens	237 (11.1%)

*Although some investment projects concern more than one sector, to avoid an overrun of the budget of the “Digital Transformation” pillar, their budget is counted once, under the sector these mainly concern
Source: IOBE

- Expected impact on **competitiveness** and **industrial strategies** mainly through **components 3.2** (education, training & digital skills), **4.6** (strengthening the resilience of key economic sectors, e.g. Smart Manufacturing, IT system for monitoring strategic investments) and **4.7** (boosting competitiveness, private investments, exports)

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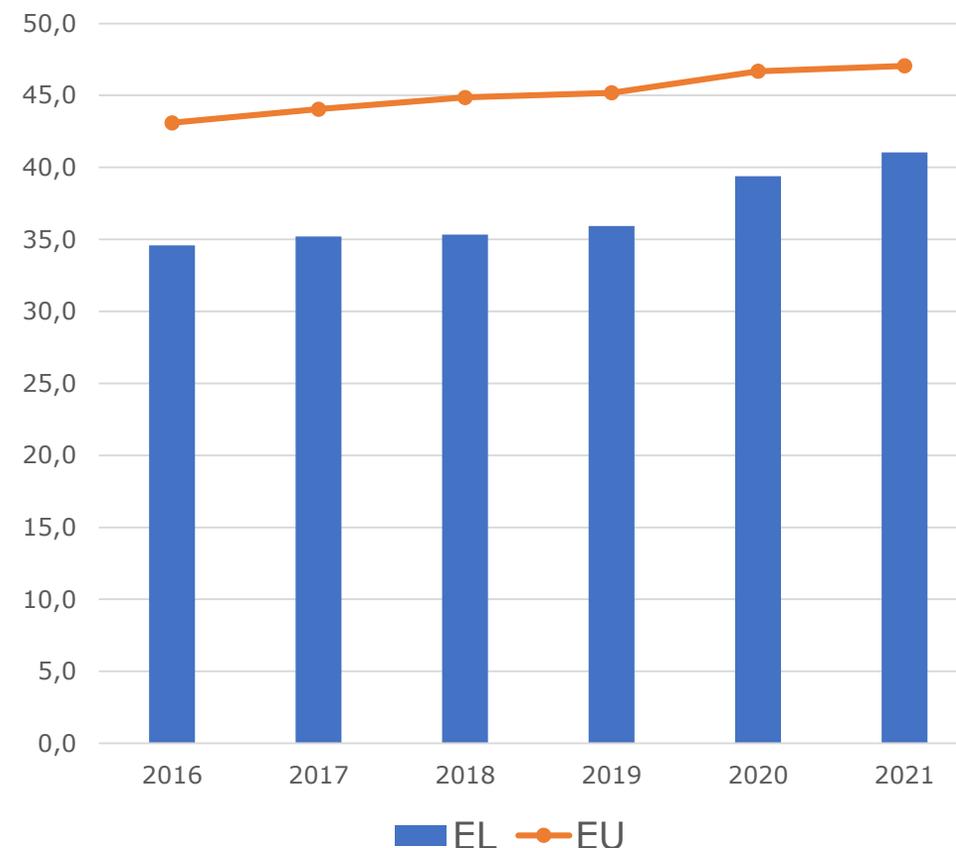
Digital skills in Greece and RRP's planned contribution

- **Greece ranks 21st among 27 EU countries**, below EU average - slight progress in digital skills since last year.
- The share of people with at least basic digital skills is low (51%).
- The percentage of employed ICT specialists is still low (2.0% in 2020 while in 2018 was 2.3%, EU average was equal to 4.3% in 2020)
- In 2020, just 12% of businesses provided ICT training to their staff - EU average of 20%.
- Greece must invest heavily in upskilling and reskilling its workforce.
- Specialised education and training programmes in areas such as Artificial Intelligence (AI), quantum technologies and cybersecurity are lacking capacity.
- The increase of digital experts could be the result of collaborations between the Higher Education Institutes and the private sector.

Digital skills in the Greek RRP

- Integrate digital skills in all educational levels' curricula.
- Reforms and investments that digitalize processes and infrastructures.
- **Modernize Vocational Education Training (VET)** curricula to match current labour market needs, focusing on digital skills (€690 million).
- Upgrade **digital skills** for conscripts/military (€32 million), for judges and judicial employees (€32 million).
- Upskilling and reskilling programmes for the labour force, aiming at the digital and green transition, expected to increase long-term employment and productivity.

DESI 2021: Human Capital

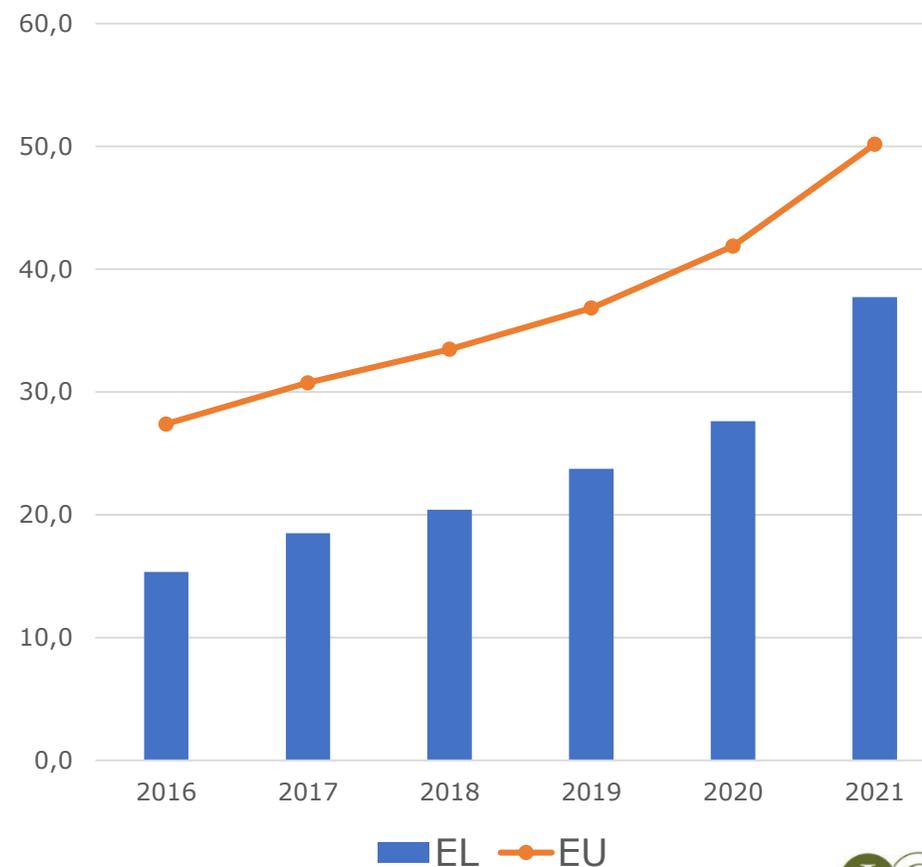


- Greece ranks last (27th) in the EU with respect to the connectivity dimension (37.7 compared to EU average of 50.2).
- In fast broadband (NGA) coverage the progress is rapid - 6% increase in 2020, reaching 87% (EU average).
- The country lags EU peers regarding very high-capacity networks (VHCN). Its fixed VHCN coverage reached 10%, up from 7% in 2019, while the take-up of at least 100 Mbps fixed broadband is very low (3% from 1% one year earlier). Both figures are well below the EU average of 59% and 34% correspondingly,
- Overall, fixed broadband take-up is still advancing at a moderate pace, (77 % in 2020, up from 76% in 2019 – similar to EU average).
- Regarding the broadband price index, progress has been achieved with a score of 53 in 2020 compared to 49 in 2019.
- The mobile broadband take-up (60% in 2019) remains below the EU average (71% in 2019).

Connectivity in the Greek RRP

- The plan involves **connectivity investments** of €321.6 million financed by the grant component of the RRP and further €912 million for investments in Very High-Capacity Networks financed based on the € 12.7 billion Loan Facility.
- The total is equal to €1.2 billion (18% of the RRP's total digital budget).

DESI 2021: Connectivity

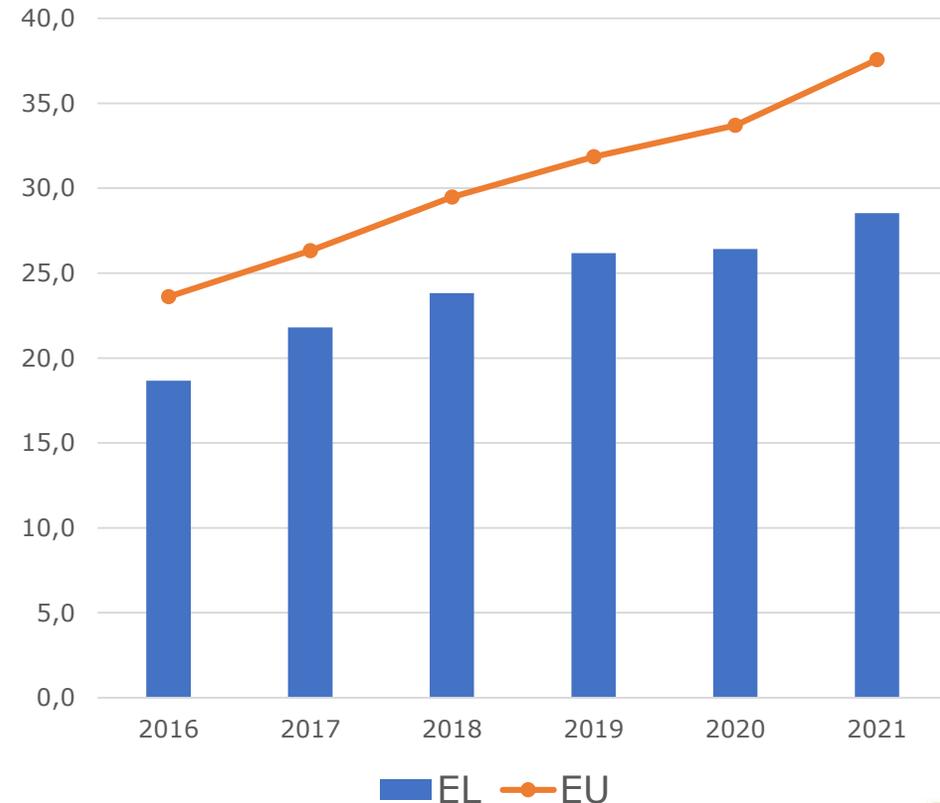


- **The adoption of digital technologies by Greek enterprises has been slow, ranking 22nd in the EU.**
- Only 19% use social media compared to EU average of 23%.
- 4% sell online cross-border, half of EU average (8%).
- 13% use big data analytics, slightly below EU average of 14%.
- 65% use ICT for environmental sustainability, close to EU average (66%).
- 38% use electronic information sharing, above EU average (36%).
- Greece's enterprises are among the frontrunners for the use of AI (34%), significantly above EU average (25%).

Business digital integration in the Greek RRP

- The RRP contains substantial measures to boost the digitalization of Greek firms, especially investments in the form of grants for the **digital transformation of SMEs** (€375 million).
- Through the planned reforms and investments, SMEs are expected to digitalize their processes and services with innovative interventions tailored to the specific needs of their industries, participation in e-commerce platforms and other forms of digital sales and utilize efficiency data procedures.
- Budget of €330 million in Loan Facility funding for the digitalization of SMEs and allocation of €770 million for large enterprises.
- Accelerating Smart Manufacturing' aims to support SMEs in the manufacturing sector to adopt state-of-the-art smart technologies and accelerate the industry's transition to Industry 4.0.

DESI 2021: Integration of Technology

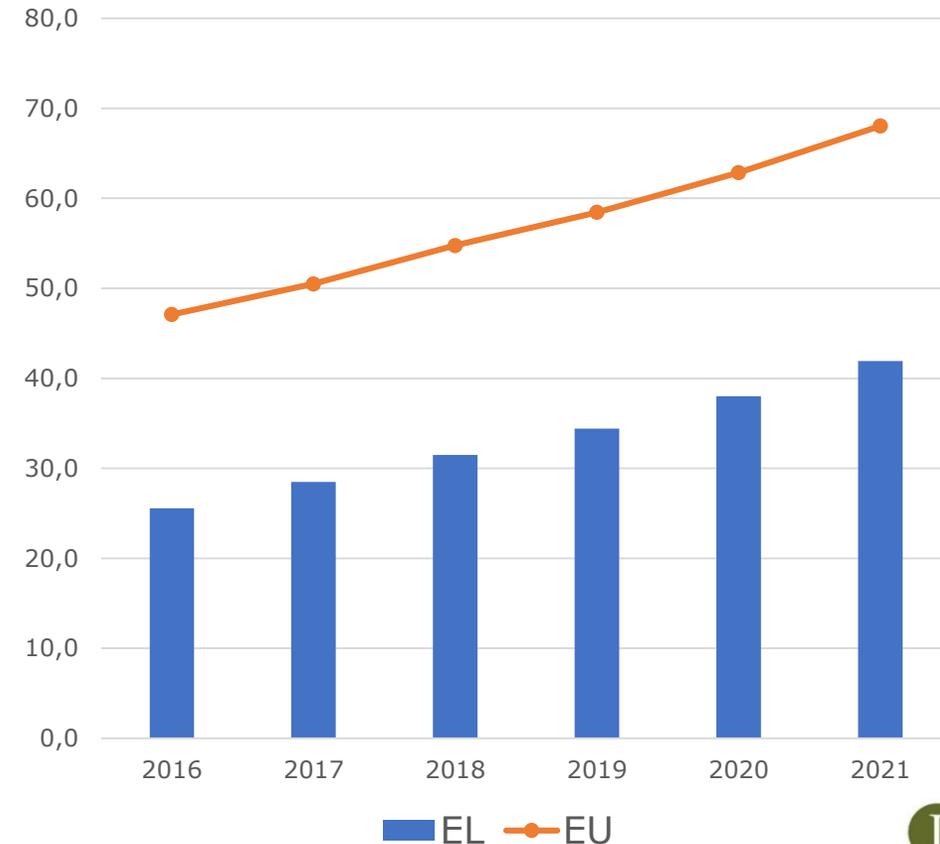


- **Greece ranks second last (26th) in Digital public services.**
- The availability of digital public services for both citizens and businesses remains low (54) for both citizens and business compared to the EU average (75 for citizens and 84 for businesses).
- The country performs relatively well in the open data maturity indicator scoring 85% in 2020, higher than EU average of 78%.
- Similarly, on active users of e-government services, the country is above the EU average of (67% and 64% correspondingly)
- Greece exceeds the EU average in the dimension of open data (85% in Greece while the EU average is 78%)

Digital public services in the Greek RRP

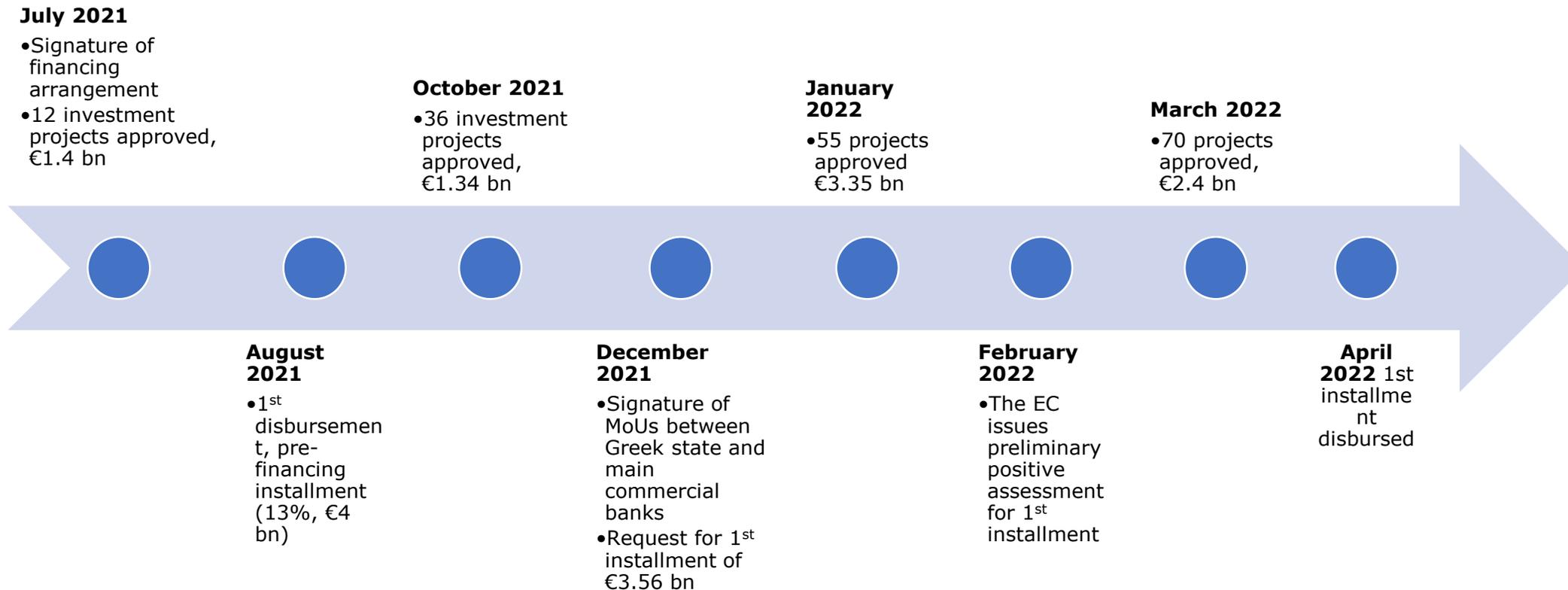
- E-government and the digitalization of public services account for a **large share of the digital budget**, worth more than €2.7 billion.
- Critical investments and reforms, among others, include:
 - the digitization of key services archives,
 - measures on cloud infrastructures and cybersecurity,
 - investments in cloud computing and big data,
 - the development of a cybersecurity strategy to increase the reliability and security of public sector systems and data.

**DESI 2021:
Digital public services**



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Key dates of Greek RRP progress during the first year

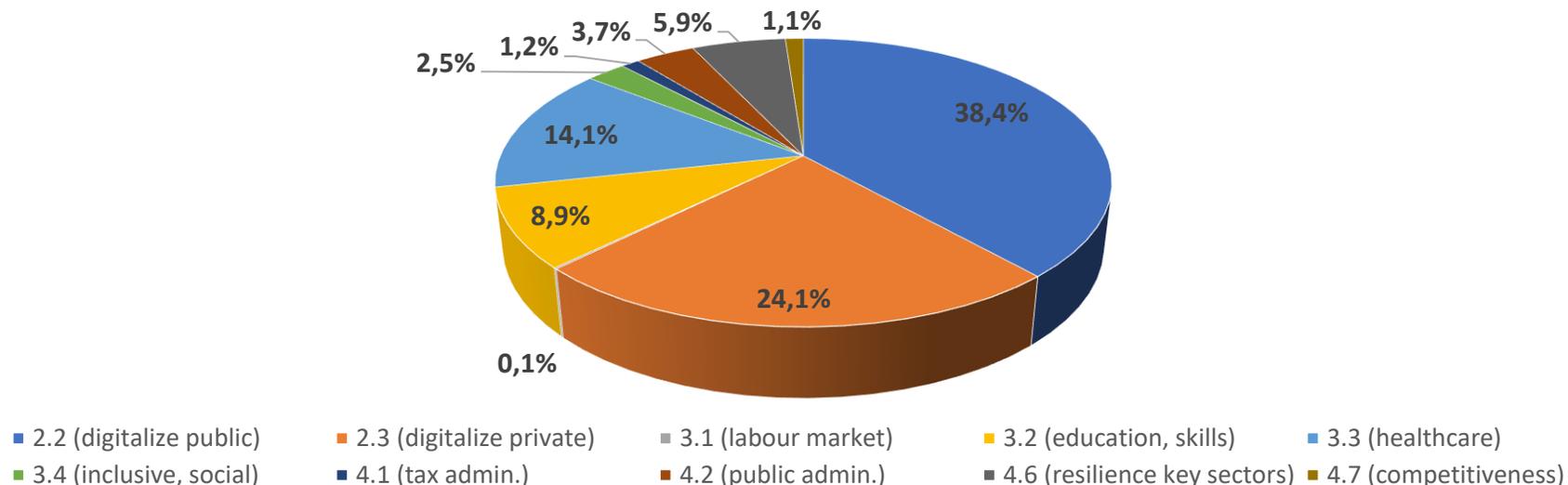


Investment projects activated for digital transition

Total budget of 40 digital investment projects activated until May 2022:
€1,855.2 million (18.2% of total budget of approved investments until May 2022)

- Investment projects directly or indirectly related to digital transformation in 14 components. Up to May 2022, projects were activated in 10 components.
- Highest shares to the budget of activated digital projects: component 2.2 (digitalization of public sector) 38.0%, **component 2.3 (digitalization of the private sector) 24.9%**, component 3.3 (improvement of healthcare) 13.9%, **component 3.2 (education, skills) 8.9%**
- **Lag in projects activated** in components 4.6 (resilience of key economic sectors), 4.7 (competitiveness and promotion private investments), which can boost competitiveness and a reorientation of national industrial strategies
- The number of open calls is very small in all components

Distribution of the budget of activated digital projects per component of the Greek RRP*



*projects activated up to May 2022

Source: Greek Recovery and Resilience Plan website (<https://greece20.gov.gr/>), Data processing: IOBE

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Greece's digital transformation performance accelerated substantially during the pandemic but remains well below the EU average, according to the latest Digital Economy and Society Index (DESI) report from 2021.

- The country made slight progress in digital skills.
- In the connectivity dimension, high-capacity networks coverage has started to be deployed, though it remains far below the EU average.
- On the integration of digital technologies into business activities, Greece ranks 22nd in the EU. Digital technologies are slowly being adopted by Greek enterprises. Nonetheless, Greece's enterprises are among the frontrunners for the use of AI.
- Regarding the digitalization of public services, Greece exceeds EU average in the number of e-government users, while it scores higher than the EU average in open data readiness, having already implemented relevant legislation and policies.

The RRP is a critical factor that can significantly contribute to the further development of digital infrastructure and the digitalization of the economy.

The relevant pillar of the RRP includes reforms and investments in three components. Reforms and investments supporting the digital transformation in other 11 components of the Greek RRP.

The budget of investments under the Digital Transformation pillar is €2,338 million, of which €2,177 million (93.1%) is covered by the RRF. Taking together the overall budget of the Greek RRP and the 20% spending "threshold" for contributing to digital transition, at least €6.1 billion of the RRP should be headed towards investments –also- for this purpose.

Expected impact on competitiveness and industrial strategies mainly through components 3.2 (education & digital skills), 4.6 (strengthening the resilience of key economic sectors) and 4.7 (boosting competitiveness, private investments, exports).

Main challenges stemming from the Greek RRP

Need to speed up the implementation of the Greek RRP, especially of the reforms and investments for digitalisation

During the first year of the Greek RRP implementation, the budget of activated digital investments amounted to €1,855.2 million, representing 18.2% of total approved investments, slightly below the 20% target

Lag in projects activated in components which can boost competitiveness and a reorientation of national industrial strategies (4.6 & 4.7). Those already concern Smart Manufacturing, IT system for monitoring strategic investments, supporting the extrovertness of Agriculture.

The number of open calls is very small in all the components of the RRP

Key for effective implementation is to strike appropriate balance between:

- The number, scope and range of **investments and reforms**
- The degree of **ambition, yet realism** of targets/milestones set
- The **degree of granularity** with respect to the targets/milestones set
- Policy **continuity and flexibility** to make adjustments with respect to grants allocation according to rapidly changing international environment
- Investments to improve **infrastructure** and measures to enhance digital **skills**. So far, the Greek RRP seems to more focus on infrastructure

Crucial to set up and implement a systematic impact assessment mechanism for the grants' branch of the RRP

- Need to take into account both short-term and long-term effects
- ❖ **Ownership of reforms** and stakeholders' engagement are necessary conditions for long-term economic yield of reforms
- ❖ Weak **coordination** between local and central administration can impede grants' absorption rates
- ❖ The implementation of the **loans branch** of the Greek RRP remains challenging given the weak quality of commercial banks' assets side and demand for loans