

Is Next Generation EU a game changer? A Comparison with IRA and ways to respond

Note written by Didier Cahen, Alicia Valroff with Elias Krief

The Covid-19 crisis significantly hit economies worldwide. On 21 July 2020, the EU Council agreed upon a massive and unprecedented recovery plan – Next Generation EU – to kick-start the European economy and support the ecological and digital transitions, making Europe more resilient and better adapted to future challenges.

This program was designed out of the solidarity between Member States and the will to help the most severely hit by the pandemic conditional on structural reforms to improve their economic situations and resilience capacity.

The disruptions in global supply chains associated with the pandemic have also led countries to reflect on the state of their industrial fabric and capacities. Namely, the renewed interest in industrial policy worldwide is visible through the launch of the Inflation Reduction Act in the US, a massive subsidy program focused on the US market that aims at decarbonizing the American economy thanks to public and private investments in cleantech and clean energy.

NextGeneration EU was agreed in principle by the European Council on 21 July 2020 and officially entered into force on 19 February 2021. The goal is to make the EU greener, more digital, healthier, more equal and stronger. It consists of a massive subsidy plan focused on the EU Member States and financed by common debt and aiming at helping Member States recover economically and socially from the Covid-19 crisis as well as reinforce their efforts regarding the digital and green transitions. Strong requirements in terms of green and digital investments are included in NGEU. The announcement of the NGEU program also aimed at reassuring markets regarding the strength of the EU.

The goal of the first part of this paper is to assess the progress of NGEU almost 4 years after its launch, and to see if it has met the expected benefits, in a context where the EU economy remains less dynamic than its international counterparts (e.g. US, China...).

On 16 August 2022, the Inflation Reduction Act was passed by the Biden administration with the aim to address climate change in the US through a massive

plan of subsidies and tax breaks. It is the third piece of legislation of a \$1.2 tn investment plan that aims at safeguarding the US's competitive edge. Some measures of the IRA, most notably the Local Content Requirements (LCRs), have come under severe criticism for undermining the free trade principles that are at the core of the World Trade Organization (WTO). Yet, one year on, the IRA has proved very efficient and attractive, with a massive movement of industries and capital relocating in the US.

The objective of the second part of this paper is to study the effectiveness of the IRA and how it potentially threatens the European Union.

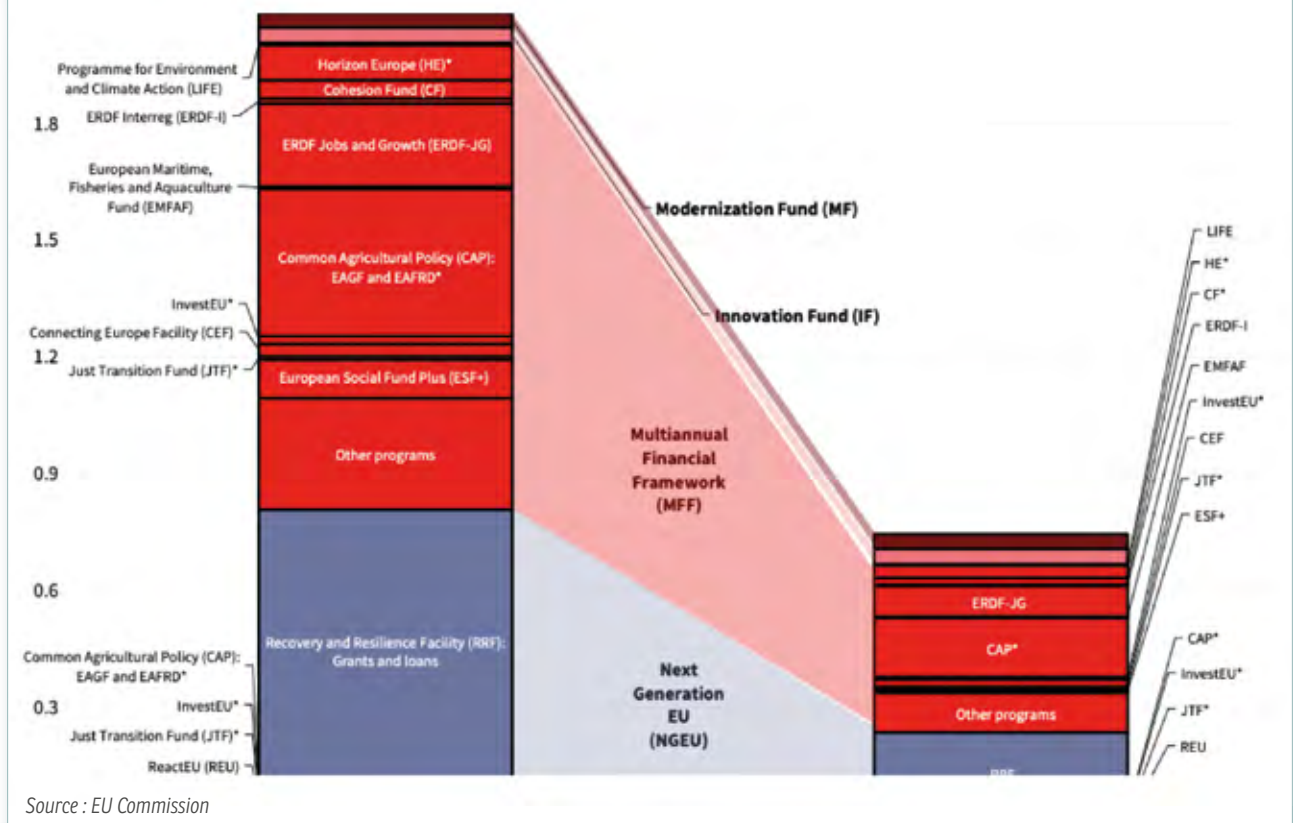
The third part of this paper shows that government support through the IRA in the US turns out to be more efficient than through NGEU in the EU. Even if NGEU has been designed following virtuous and ingenious principles, its deployment seems suboptimal, and the benefits are slow to come.

1. NGEU is an unprecedented joint response to the Covid-19 crisis, making over €800 bn available to Member States to stimulate economic recovery by investing mainly in the green and the digital transitions

In the wake of the economic challenges brought about by the Covid-19 crisis, the EU agreed on the Next Generation EU program on 21 July 2020 to provide financial support to its Member States, stimulate economic recovery and transform the EU into a more resilient, sustainable, and competitive region in the post-pandemic era. The program aims to address key challenges such as climate change, digitalization, social inequality, international competition, and economic disparities across EU countries

NGEU was preceded by three other programs adopted in early 2020: (i) the temporary Support to mitigate Unemployment Risks in an Emergency (SURE), which empowered the European Commission to borrow up to €100 bn between 2020 and 2022 to

CHART 1.
EU Funding Programs as per the Multiannual Financial Framework (MFF) 2021-2027, the NGEU program and additional funds



finance loans for Member States to fund expenditures necessary for preserving employment throughout the pandemic ; (ii) the European Investment Banks' Guarantee Fund of €25 bn addressing liquidity and funding needs of European businesses, predominantly SMEs. The Fund would enable the EIB to mobilise up to €200 billion in resources for viable firms affected by the crisis; and, (iii) the ESM's Pandemic Crisis Support (PCS), an ESM credit line of up to €240 billion (2% of Euro area GDP in 2019) to spend on direct and indirect health-related costs.

The Next Generation EU program has a financial volume of approximately **€750 billion** (at 2018 prices). Its centerpiece – the Recovery and Resilience Facility (RRF) – consists of **€338 bn in grants and €385.8 bn in loans**² that are made available to Member States over the period 2021–2026. **The RRF is a performance-based instrument: all the funds must be requested during the lifetime of the program, i.e., before Q3 of 2026.** NGEU is also linked to the 2021–2027 budget of the EU's Multiannual Financial Framework, and together they amount to more than €1,800 bn (12.4% of the EU's GDP of 2021).

As the funds are provided through the issuance of joint EU debt, NGEU underlines the European solidarity and support for the Member States most affected by the crisis. It also aims at targeting new priorities insofar as **at least 37% of RRF funds will be spent on fighting climate change** as part of a major investment plan combining EU and national public funds as well as public and private investments to support the EU on its path to climate neutrality by 2050.

Moreover, **20% of RRF funds** – Next Generation EU largest component (see below) – **will be invested in the EU's digital transformation** (cybersecurity, artificial intelligence, supercomputing...).

This part aims at thoroughly presenting the NextGeneration EU program by describing the several instruments it encompasses and the performance based approach according to which funds are granted to Member States. Then, the paper describes the state of play as of January 2024 and the slow progress of NGEU due to:

- insufficient absorption capacity of the Member States, the lack of qualifying profitable projects and skilled workforce in public administration,
- the REPowerEU initiative that led to amend the

1. See 1.2.

2. At current prices, which represented respectively €312.5 bn and €360 bn at 2018 prices.

RRF Regulation to add additional €20 bn for energy projects in the NRRPs,

- Russia's war against Ukraine that is leading to delays in implementation of the National Recovery and Resilience Plans (NRRPs),
- and some amendments linked to inflation and supply chain bottlenecks.

Eventually, the financing of NGEU will be under focus as it is the first time in the EU history that the Commission is allowed to issue such a substantial common debt.

1.1 NGEU is one of the tools at the EU's disposal to achieve its objectives of building strategic resilience, and bring the private sector onboard to push environmentally related investments

This paper is deliberately focused on NGEU as to provide a more precise overview, but NGEU is part of a larger movement of European decisions towards climate neutrality and strategic autonomy.

The first relevant decision on the matter was the launch of the European Green Deal (EGD) in December 2019, which mostly aimed at strengthening the EU regulatory framework with the Fit for 55 (FF55) energy and climate package³. Yet, EU financing dedicated to the EGD were initially limited and left most of the financial burden to the national level.

In 2020, the EU created the NGEU program which is linked to the Multiannual Financial Framework (MFF) and whose centerpiece is the Recovery and Resilience Facility (RRF)⁴. 37% of RRF spending is earmarked for climate action and 20% for the digital transition, and the overall budget of the EU also dedicates a significant amount – about €750 bn – to tackling climate change (see *Chart 1*).

In 2022, the energy crisis triggered by the war in Ukraine led to the REPowerEU plan which mainly strengthened the EU energy regulatory framework. The goal is to phase out Russian fossil fuels, to encourage energy sobriety and production of clean energy in Europe.

In 2023, the Green Deal Industrial Plan (GDIP) was launched to address tensions in cleantech supply chains and to create a more conducive environment to advance the EU's manufacturing capacity for net-zero technologies and products. Its objective is to put net-zero industry at the heart of future EU

competitiveness and energy security. It is articulated around two new pieces of law: the Net Zero Industry Act (NZIA) and the Critical Raw Material Act (CRMA). The NZIA and CRMA introduce targets and regulatory framework and governance.

A recent rapport from the Jacques Delors Institute⁵ deems that "the regulatory push remains shallow". Indeed, it explains that "the NZIA sparked little enthusiasm in the political and industrial ecosystem, due to the lack of concrete instruments to achieve the new target of 40% of European production in clean technologies, a figure that is, moreover, unsubstantiated. Apart from carbon capture, the law contains no quantified targets by sector, even though vulnerabilities and the need to deploy new industrial capacity vary greatly from one technology to another and depend on the stage in the value chain under consideration. Additionally, the list of net-zero technologies excludes some key sectors such as energy efficiency and near-zero materials".

To finance the GDIP, the Strategic Technologies for Europe Platform (STEP) has been created to recycle existing funds; the overall financing of GDIP remains modest. Although still a blueprint, the GDIP contributes to the design of an EU-wide industrial policy aligned to decarbonization goals.

Eventually, in September 2023, the European Chips Act came into force and aims at fostering semiconductor production in the EU, reducing external dependencies, and doubling the EU's global market share to 20% in 2030. The act is based on a three-pillar structure: the "Chips for Europe" initiative which aims at supporting research, development and innovation in the EU chips ecosystem and improve the transition "from lab to fab"; the second pillar focuses on improving supply security with a new framework to attract large-scale investments in production capacities; and the last pillar aims at setting up a co-ordination mechanism between Member States and the Commission to monitor market developments and anticipate crisis.

The act provides derogations to state aid rules for key facilities, reallocates €3.3 bn from existing EU funds complemented by €2.9 bn to relevant projects, and seeks to rationalize investment by Member States. The European Commission intends to mobilize €43 bn in public and private funds through the act, with €11 bn coming from the repurposing of existing funds⁶.

3. Under the European Climate Law, the EU committed to reduce its net greenhouse gas emissions by at least 55% in 2030 compared to 1990. The FF55 package is a set of 12 proposals to revise and update EU legislation and make all sectors of the EU's economy fit to meet this target. Source: the European Commission.

4. See 1.2.

5. "Energy Union 2.0. to deliver the European Green Deal: stronger governance, common financing and democratic tools", Jacques Delors Institute, November 2023.

6. Data and information are taken from "The return of industrial policies: policy considerations in the current context", OECD, 8 November 2023.

TABLE 1.
NGEU program,
breakdown by
instruments

Name of the instrument	Amount of the instrument	Purpose of the instrument
Recovery and Resilience Facility	€723.8 bn (€338 bn in grants + €385.8bn in loans)	Supporting the implementation of structural reforms, investing in green and digital transitions, and enhancing the resilience of national economies
React-EU	€47.5 bn	Supporting investments and reforms, focusing on mitigating social and economic of the Covid crisis, especially through employment
Just Transition Fund	€10 bn	Assisting regions that are heavily dependent on fossil fuels in addressing challenges associated with the green transition
Rural Development	€7.5 bn	Supporting the vibrancy and economic viability of rural areas through funding and actions that support rural development
InvestEU	€5.6 bn	Mobilizing private and public investment by providing guarantees and technical assistance to support sustainable infrastructure projects, R&D, and SMEs
Horizon Europe	€5 bn	Strengthening the impact of R&D in developing, supporting and implementing EU policies while tackling global challenges
RescEU	€1.9 bn	Protecting citizens from disasters and managing emerging risks
REPowerEU	€20 bn	Saving energy, producing clean energy, diversifying energy supply chains

Sources: NGEU tracker, European Council
Notes : REPowerEU chapters must be included in Member States' NRRP but REPowerEU is not per se part of NGEU

CHART 2.

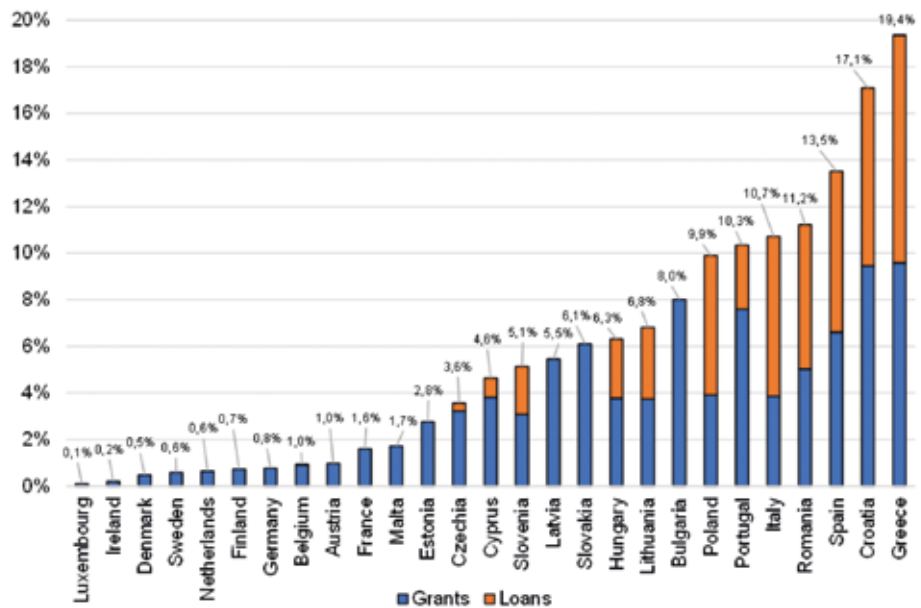
RRF entitlements and funding requested in Euro area countries (2021-26, percentage of GDP)



Source: ECB

CHART 3.

RRF funding (loans and grants) to be received by EU Member States, % of GDP



Source: EU Commission, NGEU tracker

All the decisions mentioned above combined with the role of institutions like the EIB in leveraging public and private funds and the recently voted Emission Trading System (ETS) reform are contributing to filling critical gaps in the EGD policy architecture, in terms of funding, regulation and governance.

1.2 NGEU encompasses several instruments to achieve its objectives: green and digital transitions, structural reforms to recover from the pandemic and economic resilience in all parts of the Union

REPowerEU was adopted on 4 October 2022 by the European Council to reinforce its strategic autonomy *vis-à-vis* Russian fossil energy; the revised Recovery and Resilience proposal offers Member States the possibility to add a REPowerEU chapter to their National Recovery and Resilience Plan, thus closely intertwining REPowerEU and NGEU, though REPowerEU is not part of NGEU. REPowerEU is based on three pillars: energy savings, renewable deployment and supply diversification.

As pointed out by the Jacques Delors Institute, “No individual Member State possesses the capacity to independently manage the accelerated phasing-out of Russian gas. This underscores the need for a collective, coordinated effort on a European scale”. REPowerEU goes side by side with FF55 as “it first requires the full implementation of the FF55 proposals and higher targets for renewables and energy efficiency and lifting permitting barriers to renewable deployment. It aims at tripling the installed capacity of solar and wind by 2030. If fully and successfully implemented, REPowerEU could lead to a 57-58% emission reduction by 2030, overshooting the EU Climate Law objective of -55%”⁷

Eventually, no EU fresh funding is provided for this program: €225 bn of loans still available from the RRF have been redirected towards the achievement of REPowerEU.

1.2.1 With a dedicated envelope of €723.8 bn, the Recovery and Resilience Fund (RRF) is the centerpiece of Next Generation EU, with a focus on the green and digital transitions

The RRF is the centerpiece of the NGEU program and Member States are entitled to a certain amount of grants and loans. For 70% of the total of €338 bn available in grants, the allocation key takes into account the Member States' population, the inverse

of its GDP per capita and its average unemployment rate over the period 2015-2019 compared to the EU average.

For the remaining 30%, instead of its unemployment rate, the observed loss in real GDP over 2020 and the observed cumulative loss in real GDP over the period 2020-2021 is considered.

Member States can also request a loan worth up to 6.8% of their 2019 Gross National Income (GNI).

1.2.2 Italy and Spain are the main recipients of the Recovery and Resilience Fund in volume

Chart 2 reflects the agreed allocation of RRF funds of 2023⁸ as a percentage of each Member State GDP. One third of the fund (30.1%) is currently⁹ estimated to be absorbed by Italy (€71.8 bn in grants and €122.6 bn in loans), or 10.9% of Italy's 2021 GDP. Spain has become the second largest recipient of the RRF's fund with 25.6% (€79.8 bn in grants and €83.2 bn in loans), or 13.5% of Spain's 2021 GDP.

The structure of the RRF was designed at a time when it was thought that interest rates were going to be “low for long”. Since the start of 2022, interest rates have risen rapidly for all sovereign issuers including the EU, but it does not seem to have interfered with the Commission's issuance of bonds to fund the RRF and other EU programs. Through this period, EU bond issuance was met with steady investor demand, despite the backdrop of market volatility.

1.3 Recovery and Resilience Facility (RRF) funds are awarded to Member States following national plans and are conditional on the delivery of reforms and investments

The Recovery and Resilience Facility is performance based. This means that the Commission only pays out the amounts to each country when they have achieved the agreed milestones and targets towards completing the reforms and investments included in their plan.

As there is little common policy regarding energy, the green transition, budgets and industries, NGEU has adopted a decentralized model that relies on Member States, which have obligations of results but not of means, in contrast with the US centralized approach of the IRA.

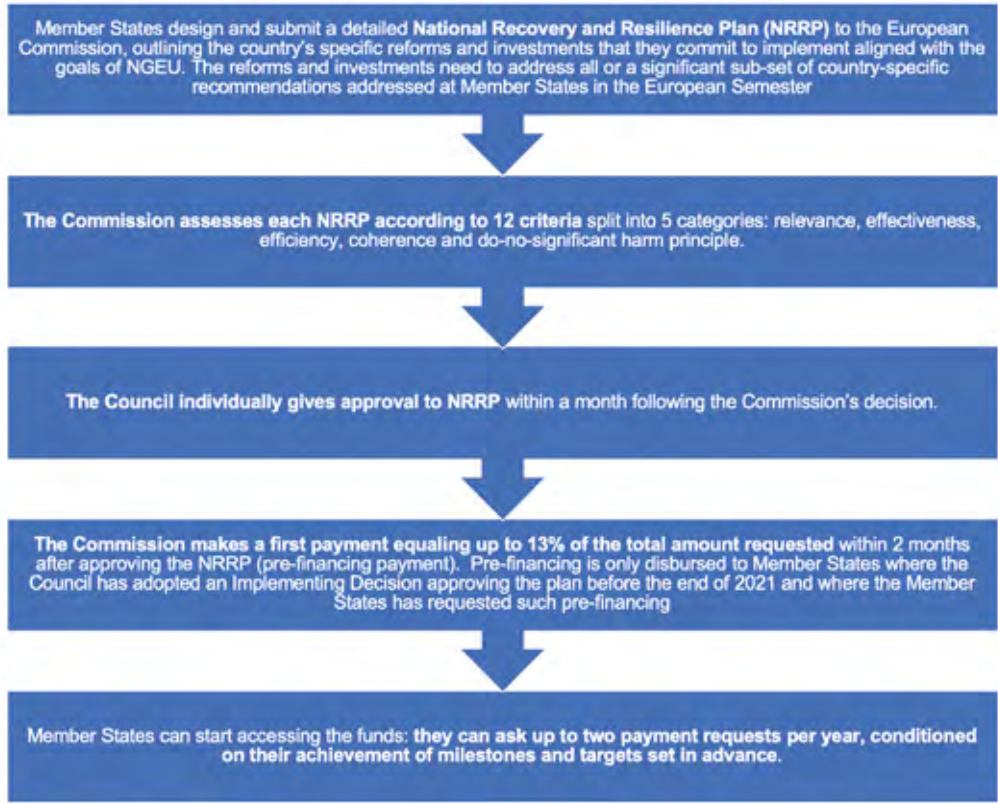
Thus, to access the loans and grants offered by the NGEU program, Member States are required to go through the following procedure:

7. Op. Cited Jacques Delors Institute.

8. Several Member States have requested amending their initial plan written in 2021.

9. Data of 30 September 2023.

CHART 4.
Procedure for receiving European funds



Source: Fondation Robert Schumann, European Commission

The EU is determined to get results from the NGEU program and has introduced clauses in the RRF Regulation to ensure that Member States are moving in the right direction. First, the disbursement of funds is conditional on achieving satisfactory progress on the roadmap submitted by Member States to the EU Commission. Additionally, as a preventive action, if the Commission discovers deficiencies, it can interrupt or suspend payments to Member States until the problems detected are resolved. The Commission can also take action after payments have been made by introducing financial corrections if it identifies failures at a later stage.

1.4 January 2024 state of play: NGEU is almost used at full capacity but faces deployment issues

Halfway through its lifetime, 30.5% of RRF funds have been disbursed. More precisely, 41.9% of the total RRF grants available and 20.5% of the total RRF loans available have been disbursed (see Table 2).

On 9 November 2023, V. Dombrovskis¹⁰ affirmed that “the implementation of the [Recovery and Resilience] Facility is now at full speed. We expect, if everything goes according to plan, the amount of disbursements to exceed €200 billion by the

end of the year”. Additionally, he warned that “we also need to deal with backlogs. Towards the last years of the RRF’s timeline, we should avoid an accumulation of payment requests and funding needs”.

TABLE 2.
RRF funds available and disbursed as of mid-January 2024

	Total RRF	RRF Grants	RRF Loans
Available (EUR bn)	723,8	338	385,8
Disbursed (EUR bn)	220,5	141,6	78,9
Percentage disbursed	30,5%	41,9%	20,5%

Source: EU Commission

1.4.1 The 27 national plans have been approved by the Commission and adopted by the EU Council

Table 3 highlights that the 27 Member States’ NRRPs have been approved by the Commission and adopted by the EU Council.

As of January 2024, 27 Member States had submitted requests for amending their plans. These modifications are an opportunity to include a REPowerEU chapter in the plan – which has been done by 23 Member States – but also to address

10. V. Dombrovskis, “Statement at the European Parliament BUDG-ECON committee 12th Recovery and Resilience Dialogue”, October 2023.

TABLE 3.
State of play on implementation of RRF payment requests (as of December 2023)

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SL	SK	FI	SE
27 plans approved by the Commission and adopted by the Council																											
21 pre-financing disbursed (EUR 56.6 billion)							*																				
25 Operational Arrangements signed																											
42 payment requests submitted to the Commission		2x	2x					4x	3x	2x	3x	4x										3x	2x	2x	3x		
28 payments disbursed (EUR 174.69 billion)								2x	3x		2x	3x										2x	2x		2x		

Source: EU Commission

administrative capacity issues with additional measures, to increase the absorption capacity of RRF and other EU funds, and to catch up on the disbursement schedule¹¹.

Several Member States have used the option to take out loans under the RRF; as part of modifying their plans, ten Member States have asked to increase the amount of loan support or requested loan support for the first time for an extra amount of €127.2 bn, bringing the amount of requested RRF loans to €292.6 bn.

As of December 2023, the Commission had endorsed 18 modified Recovery and Resilience Plans¹².

Overall, the Commission has so far received 55 payment requests and disbursed a total amount of €220.5 bn through 32 payments, of which €141.6 bn are grants and €78.9 bn are loans¹³.

1.4.2 NGEU is a slow and complex process which faces Member States' limited capacity regarding the absorption capacity of European funds

Though it is an innovative initiative that relies on strong rational principles (e.g. performance based approach), NGEU remains so far too little used, compared to the initial planning and ambitions. its deployment is not optimal and NGEU procedures turn out to be slow, complex and very bureaucratic. This can be explained by several reasons.

First, NGEU is a very bureaucratic tool, which stumbles upon the lack of skilled and efficient

workforce in public administration – local, regional, national and even European in some cases. This is particularly visible in the difficulties of the Commission and Member States to keep up with the initial indicative disbursement calendar as seen above. Additionally, the complexity in the structure of the program – e.g., encompassing seven different funds and being intertwined with separate plans like REPowerEU – only adds up to the existent difficulties.

A massive challenge lies ahead of the EU insofar as approximately two thirds of the RRF envelope will have to be disbursed during the second half of the facility's lifetime. In that respect, the capability of the Commission can be questioned as such an amount to disburse indicates a future heavy workload in terms of assessing the required preliminary conditions in due time. This is all the more important as, even during the first half of RRF's lifetime, some preliminary assessments were overdue; indeed, no preliminary assessments have been made publicly for the requests submitted by Greece on 17 May, Estonia on 30 June, and Croatia on 24 July¹⁴.

Second, past experiences have suggested that Member States have limited absorption capacities, which are likely to hinder the speed of the disbursement of NGEU loans and grants. The challenge will be for Member States to have the capacity to absorb a significant amount of money in a short period of time.

11. Op. Cited V. Dombrovskis.

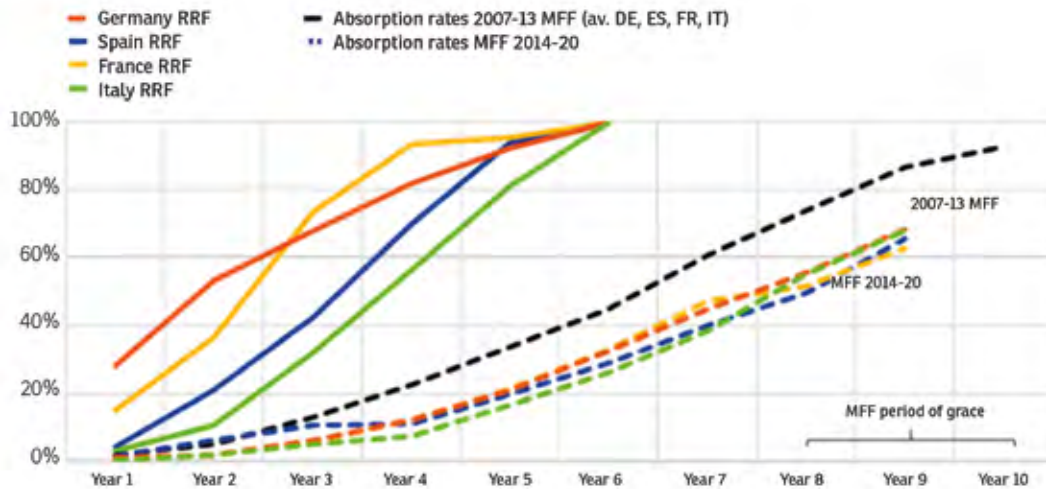
12. "Recovery and Resilience Dialogue with the European Commission", EGOV, 11 December 2023.

13. Source: Recovery and Resilience Scoreboard.

14. The European Commission must approve the NRRP within the two months following their submission.

CHART 5.

Projected cumulative absorption rates of RRF funding compared with realized absorption rates of past EU multiannual financial frameworks (x-axis: year of programme; y-axis: absorption as cumulated percentage of total envelope)



Source : Dorrucchi and Freier (2023), based on European Commission data and estimates of the Working Group on Public Finance of the European System of Central Banks. For France cash pay-outs under RRF according to Coeuré report (2021).

Notes: The solid lines refer to the foreseen absorption of RRF funds in Germany (DE), France (FR), Italy (IT) and Spain (ES) over the RRF period (2021-26). The dotted lines refer to the actual absorption by these four countries of past EU resources made available under the EU's multiannual financial framework (MFF). The absorption rate is the amount paid to a Member State as a percentage of the total EU budget made available to that country. Year 1 is the first year of the respective programme, i.e., 2007 for the 2007-13 MFF, 2014 for the 2014-20 MFF, and 2021 for the RRF. Pre-financing under the RRF is included in Year 1. The absorption rate of the 2007-13 MFF (black dotted line) is shown as average of the four countries and includes the European Regional Development Fund (ERDF), the Cohesion Fund (CF) and the European Social Fund (ESF), while the 2014-20 MFF includes only the ERDF and the CF. Data under the 2014-20 MFF are provisional for the year 2021 (Year 8 in the chart)

In that respect, Chart 5 shows that, for the 2014-2020 multiannual financial frameworks, the largest Member States absorbed only 60 to 70% of funds that they were allocated after 9 years. Regarding NGEU, the same Member States are expected to absorb the entirety of the funds they were allocated over 5 and a half years.

Third, the lack of qualifying and profitable projects¹⁵ to be financed by NGEU funds slows the process and consequently, little progress is visible. One explanation is the weak industrial fabric of the EU and the lack of skilled workforce, especially in strategic sectors¹⁶. As a result, some countries struggle to fulfill their milestones and targets, and the delays observed in the implementation of the NRRPs lead to question the efficiency of NGEU.

1.4.3 Spain seems to be on the right track

Spain seems to have a quite successful story with NGEU so far¹⁷. As of 18 October 2023, €37 bn were received so far in grants, representing 46.4% of the total initial grant amount for Spain. Loans were only included in the plan in the revision that took place in October 2023. So far, no payment in loans

was made. Overall, the total payment received by Spain so far represents 22.7% of its plan, and Spain is ranking third in progress of its NRRP (with 29% of milestones and targets fulfilled), which is an indicator of the positive impact of NGEU in Spain.

CHART 6.

Spanish National Program: Breakdown of funding by lever policy



Source: EGOV (think tank of the European Parliament)

15. Prof. A. Bartzokas from the LSE Hellenic Observatory and the University of Athens identified several possible implementation gaps in the EU RRF, and among them were "lack of timely implementation [and] limited project upstreaming capacity". Source: Growth Lab, Harvard University.

16. See 3.4.

17. The European Parliament, "Spain's National Recovery and Resilience Plan", October 2023.

TABLE 4.

Spanish national program : Measures receiving the largest amount of funding



Source : EGOV (think tank of the European Parliament)

The Spanish NRRP was amended in October 2023 and increased its value by roughly 135% (from €69.5 bn to €163 bn: the grants went from €69.5 to €79.8 bn, and loans representing €83.2 bn were added). The Spanish NRRP also exceeded the RRF's target of 37% of funds disbursed in the green transition and 20% in digitalization as it will respectively invest 39.9% and 25.9% of the funds it has been allocated.

Spain's amended plan includes 11 lever policies (LPs) observable on figure 1. Out of 253 measures planned, 111 are reforms and 142 are investments. Reforms aim at improving business demographics and climate, promote entrepreneurship and increase the size and efficiency of companies.

The main focus will be LP 5 which targets the modernization and digitalization of the Spanish industry and SMEs and for which 33 investments have been planned and €87.8 bn – or 54% of the Spain's NRRP – have been budgeted. Out of the 10 largest investment projects worth €64.2 bn or 39.4% share of Spain's RRF allocation, five are featured in LP 5 with endowed RRF resources of 49.3 bn, equaling roughly 30% of the available RRF allocation (see Table 4).

The Spanish NRRP also introduces strategic public-private partnerships (PERTEs) in LP5, which are the equivalent of the Important Projects of Common European Interest (IPCEIs) at EU level¹⁸. Table 5 shows the different areas in which Spain aims at developing public-private partnerships. As of December 2022, about 29% of the budget for these PERTEs projects had been awarded or opened to calls.

However, an industry representative explained to Eurofi that although the program is on course and the government is making progress on the milestones that were sought, according to data and their experience, SMEs are not receiving all the aid they need to boost their investments, to increase their productivity and gain competitiveness.

TABLE 5.

Execution status of the Spanish PERTE projects (€ millions, as of 14/12/2023)

PERTE project	Public funds	Awarded and open calls
Microelectronics	12,250	–
Renewable energies, hydrogen and storage	10,475	4,957
Electric and connected vehicle	4,295	2,018
Decarbonisation	3,100	–
Digitalisation of the water cycle	2,790	425
Aerospace	2,126	1,844
Social and care economy	1,808	380
State-of-the-art health	1,650	912
Agrifood industry	1,450	1,063
New language economy	1,101	298
Circular economy	792	192
Marine sector	310	250
Total	42,146	12,339

Source: Caixabank research, Portal of the Recovery, Transformation and Resilience Plan

This is due to the fact that the calls for proposals are complex and usually have a very short deadline, so that small and medium-sized enterprises that do not have a specific department to follow these issues often give up access to these calls for proposals. To remedy those flaws, they made some recommendations including:

- Improve coordination between the different levels of government to manage public funds,
- Simplify access to resources by, for instance, generating large calls for proposals with relevant budgets, establishing sufficiently reasonable deadlines, standardizing and simplifying the requirements for accessing measures,
- Reinforcing communication and dissemination,
- Introducing fiscal measures, such as adopting new instruments that have proved efficient in other countries and facilitated the financing of some actions...

18. See 3.4.3.

1.4.4 Italy is now keeping up with its ambitious plan

Italy is the main beneficiary of the RRF funds: the country is entitled to receive €191.5 bn of NGEU funds - €68.9 bn in grants and €122.6 bn in loans. Italy has known a rocky start and seems now to continue to have difficulties keeping up with its objectives and spend the money received accordingly.

The Italian NRRP is structured around six fields of intervention that will be targeted through a mix of reforms and investments. Across its six missions, Italy plans to exceed the RRF's expenditure targets by spending 37.5% of its RRF allocation on the green transition, and 25.1% on the digital transformation. All six missions are also required to address three horizontal priorities: youth, gender equality and territorial cohesion.

Italy's NRRP counts 60 reforms to be carried out in the scope of all 6 missions, with a focus on missions 1 ("Digitalization, innovation, competitiveness, culture and tourism"), 2 ("Green revolution and ecological transition") and 4 ("Education and research") (see Chart 80). In parallel, Italy has committed to 132 investment measures aiming at increasing the country's growth potential in the long term.



Italy's initial NRRP was said to be above ambitious and has already been re-written by M. Draghi¹⁹ who admitted in December 2021 that it was impossible to keep up with such a plan. In 2022, only 10 out of 27 goals were achieved, and only €12 bn were spent instead of the €40 bn planned. In March 2023, Brussels decided to temporarily freeze Italy's third instalment as it failed to deliver the expected milestones and targets, especially the accommodation for 7,500 university students. In

that regard, the Financial Times²⁰ wrote that Italy "has struggled to keep pace with the demanding reform and investment timetable agreed with Brussels in 2021, particularly since Meloni's rightwing coalition took power last year".

The difficulties encountered by Italy show that money is not the only issue European Member States are facing. In that regard, H. Waiglein, the Director General of the Federal Ministry of Finance of Austria, stated for the *Eurofi Magazine*²¹ that "money is less of an issue than the co-ordination of all markets to deliver goods and services needed for the green transition".

Italy submitted a revised version of its NRRP during the Summer 2023, and the Council adopted it on 19 September 2023. Now that necessary amendments to the plan have been made, Italy seems to be back on track: as of December 2023, the Commission had disbursed €101.8 bn to Italy out of €191.5 bn, and Italy has submitted a fourth payment request.

Nevertheless, to be able to spend funds received faster, Italy could allocate more money to tax credits as "private entities tend to be more nimble than public agencies bogged down in cumbersome bureaucracy", which is the strategy chosen by the US and it seems to have borne fruit so far (see Part 2).

1.5 NGEU is financed by common debt and national resources

Chart 8 highlights the key features of the EU debt issued to finance the NGEU program.

1.5.1 NGEU is by far the largest EU bond-financed program ever

The financing of NGEU relies primarily on common debt. Before the pandemic, the EU was thought to be legally barred from financing its expenditure through joint debt. A recent briefing from the European Parliament²² highlighted the challenge that designing the RRF represented: "As the EU Treaties do not allow the EU budget to be financed by debt, the RRF had to be run outside the EU budget's framework. (...) The debt taken up for provisioning the RRF is a Commission debt contracted on behalf of the EU, not common debt of the Member States."

"For the RRF, the Commission was exceptionally as a one-off measure authorized to take up a considerable amount of debt. It is to be noted that

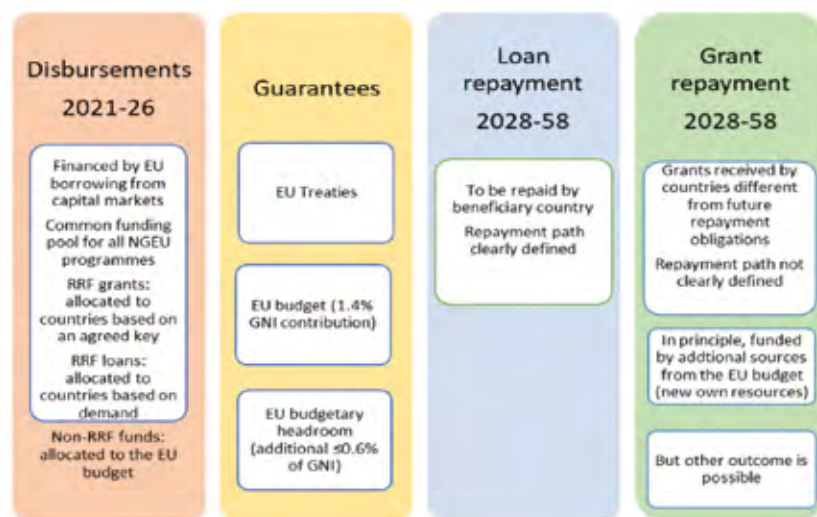
19. Mario Draghi was Italy's Prime Minister between 13 February 2021 and 22 October 2022 and took part in the development of Italy's NRRP.

20. "Will Italy squander its €200bn opportunity?", *Financial Times*, 30 August 2023.

21. H. Waiglein, "Green transition and fiscal sustainability", Views, *The Eurofi Magazine*, September 2023.

22. [https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/740087/IPOL_IDA\(2023\)740087_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/740087/IPOL_IDA(2023)740087_EN.pdf)

CHART 8.
Key features of EU debt within the NGEU/RRF program



Source: ECB

under the RRF in order to satisfy the requirements of the no-bail out clause (article 125FEU) the Member States do not guarantee another Member States' debt".

To fund the NGEU program, the EU borrows on the capital markets, allowing low-rated countries to benefit from its high credit rating that helps obtain more favorable financial terms²³. To protect this credit rating, the EU is using the EU budget headroom²⁴ as a guarantee (see Chart 81, "Guarantees" box). In order to protect the borrowing under NGEU, the EU headroom is 0.6 percentage points higher than the standard one for the period until 2058, as the debt will be gradually reimbursed over the period 2025-2058²⁵. Indeed, the average maturity of EU securities is 11 years, and payback deadline are spread out between 2025 and 2058.

It is the first time in the EU history that such a substantial common borrowing and, to a certain extent, risk sharing mechanisms have become characteristics of a EU budgetary plan. To issue the common debt, the Commission resorts to multiple instruments: a combination of medium – and long-term debt issuance across different maturities via EU-Bonds (both regular and green bonds) and short-term via EU-Bills²⁶.

The borrowing strategy to finance NGEU relies on the safety and cost-effectiveness of the way money is raised. In this perspective, EGOV explained that "NGEU is making the EU one of the largest issuers of euro-denominated debt (on average €150 bn a year) and the world's biggest green-bond issuers,

in line with the diversified funding strategy"²⁷. Indeed, the EU plan to finance up to 30% of NGEU, i.e. €250 bn, by issuing green bonds. NGEU green bonds can solely fund eligible green measures.

However, as of July 2023, only €44.2 bn in green bonds have been issued, and about €21.4 bn have actually been allocated and given to states. The pool of planned eligible expenditure for NGEU green bonds, however, stands at €187 bn according to forecasts made by the Commission when assessing the NRRPs²⁸. The Commission must also ensure that the use of funds complies with the EU Green Bond framework, and report to investors on the impact achieved.

1.5.2 Some uncertainty persists around the resources used to reimburse the common debt

The European Commission has committed to reimbursing the funds borrowed on the markets to finance NGEU in the long run, over the period 2025-2058.

The repayment path of the loan part of NGEU is clearly defined: loans will be repaid by the borrowing Member State. However, the repayment path of the grant part of NGEU has not yet clearly been defined as of January 2024. Two things are certain though: grants received by countries are different from their future repayment obligations, and, as a last resort, all grants will be repaid by the EU budget by 2058 at the latest (see Chart 8, "Grant repayment" box).

23. The EU's credit rating (AAA by Fitch and Moody's) is better than the rating of 22 out of the 27 EU Member States.

24. The headroom is the difference between the maximum amount of revenue that the EU can raise for the EU budget and the actual spending from the EU budget.

25. I.e., Member States agreed to a temporary increase in the maximum amount of revenue the EU can call from Member States per year (adding an allocation of 0.6% to the basic own resources ceiling of 1.4% of EU Gross National Income) until all NGEU liabilities have ceased to exist. (source: EU Budget Policy Brief).

26. See "The EU as an issuer: the NextGenerationEU transformation", EU Budget Policy Brief, European Commission, July 2022.

27. EGOV, "Borrowing strategy to finance Next Generation EU", November 2022.

28. Data taken from "Degree of implementation of EU green bonds program linked to NGEU", J.-F. Pons, July 2023.

CHART 9.

Evolution of 10-year benchmark yields for the EU, France, Germany and Spain (in %)



Sources: EGOV, Bruegel, Bloomberg data

Several resources are considered to pay back the debt: the Carbon Border Adjustment Mechanism (CBAM²⁹), the EU Emissions Trading System (EU ETS), and a digital levy. The EU also contemplates the possibility of new own resources such as a tax on financial transactions, or a new agreement on corporate taxes³⁰.

In the coming months, Member States must examine the Commission's proposals about the reimbursement of NGEU and will have to make a decision unanimously. The main question is who will incur the repayment costs of the NGEU³¹.

Even though NGEU is a solidarity instrument, it has limits: no economically healthy country will accept to incur the risks to repay for weaker countries of the Union. The enhanced economic and fiscal heterogeneities of the Union are largely responsible for this.

1.5.3 Is EU common debt a fantasy?

The interest rate on European Union bonds is higher than that of its strongest Member States, and that despite its favorable credit rating.

An article by *The Economist*³² highlights two important lessons that should be drawn from markets' reaction to EU debt and its interest rates: "one is that investors are indicating it is unlikely that there will be more such joint debt issuance in future (...), the second lesson is that markets think of the EU as something that differs from a top-notch sovereign issuer like Germany or America – the safest bets when it comes to lending money. Such governments have the power to raise taxes

when they need to repay creditors. The EU, by contrast, needs to ask nicely for national capitals to send a cheque". Even if the EU budget provides strong guarantee, it does not have the sovereignty over its debt as other sovereign states do.

Some indicators can lead to wonder if the common debt issued under NGEU is indeed a first step towards a European safe asset. As explained by *the Banque de France*³³, "a genuine European safe asset would have several benefits for financial stability and European integration and would facilitate the financing of public policies by reducing borrowing costs". Yet, the current situation is different:

- After two years of issuance, and even though the EU has not faced particular problems to get funds, the EU debt turned out to be less attractive for investors than that of its main Member States³⁴,
- The fact that NGEU is a unique and temporary initiative implies that EU securities are not going to remain on markets forever, which can have a deterrent effect for investors looking for liquid and easily tradable assets,
- Though liquidity has improved with the introduction of the unified funding approach in January 2023, the current market of EU common debt remains narrow and not deep enough, and so, insufficiently liquid.

A recent study by Trendeo, Fives, McKinsey & Company and the institute for reindustrialization shows the distribution of investment by regions and highlights that despite its significant efforts, the EU struggles to convince investors to invest on its

29. CBAM would allow the EU to introduce the same carbon price for domestic and imported products.

30. "L'économie mondiale", CEPII, September 2023.

31. "Plan de relance : 10 points sur les progrès de NextGenerationEU", *Le Grand Continent*, October 2023.

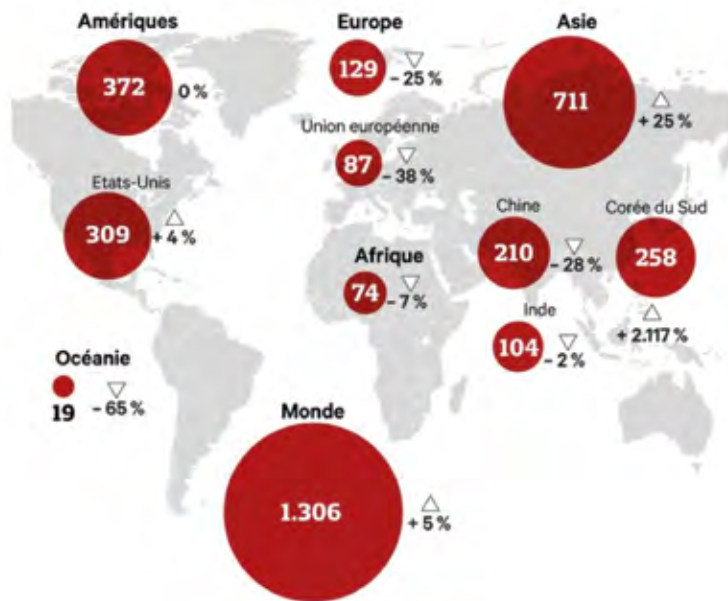
32. "What markets are trying to tell Europe – and why it should listen", *The Economist*, October 2023.

33. "A European safe asset: new perspectives", *Banque de France Bulletin*, April 2021.

34. Op. Cited *Le Grand Continent*.

CHART 10.

Distribution of investment by region

In \$bn, between July 2022 and June 2023 compared with the period June 2021- June 2022: Δ evolution, in %

Sources: Trendeo, extracted from Les Échos

territory (see Chart 10). According to this study, investments in the US have increased by 4% from July 2022 to June 2023 compared with the period June 2021-June 2022, amounting to \$309 bn. This is undoubtedly mainly due to the Inflation Reduction Act (IRA).

Additionally, even if China recorded 28% less in investments over the same period, investments in Asia have grown by 25%, especially thanks to a \$227 bn investment by Samsung in South Korea. By contrast, investments recorded by Europe between July 2022 and June 2023 stood at -25%; this figure even reached -38% in the European Union (compared with the period June 2021-June 2022), which questions the performance of the RRF and the effectiveness of Member States' public spendings.

Therefore, one can wonder to what extent NGEU is efficient, and what role the IRA plays in such a growth gap between both sides of the Atlantic. Indeed, differences on the efficiency and speed of implementation seem to exist between the IRA and NGEU, potentially threatening to further widen the gap between both regions.

In that regard, the Jacques Delors Institute argues that "at a time when the energy transition is gaining pace, the EU and the United States are actually facing similar challenges: increasing Chinese and international competition, vulnerable strategic value chains, labor shortages, lengthy permitting processes, public sensitivity to activities with a high environmental impact, and demands for a fair and equitable transition. The difference lies within the type of policy answer provided as a result of these challenges"³⁵.

2. Can the IRA widen the gap between the US and the EU?

On 16 August 2022, the Biden administration promulgated the Inflation Reduction Act (IRA), a \$369 bn subsidy package that aims at making the US the global leader in clean tech, notably by cutting CO₂ emission by 40% by 2030. Though it was announced nearly two years after the launch of NGEU, the IRA raises many questions and concerns on the European side.

This part aims at thoroughly describing the IRA and the goal of the Biden administration to make the US the leader in cleantech energy and to reduce its CO₂ emissions by 40% by 2030. It also assesses the success of the IRA one year after it was voted, showing that companies from all around the world are attracted to the US, even if structural headwinds mitigate this deeply optimistic assessment.

2.1 The IRA is a protectionist-inspired subsidy package that aims at making the US the global leader in clean tech and CO₂ emission cuts

2.1.1 The IRA gathers a variety of measures worth approximately \$400 bn to reach its goals

- The IRA is a massive subsidy package that was signed into law by President Biden on 16 August 2023 and that clearly states the US ambition to:
- Become the global leader in the environmental transition by cutting its CO₂ emission by 40% by 2032,

35. Op. Cited Jacques Delors Institute.

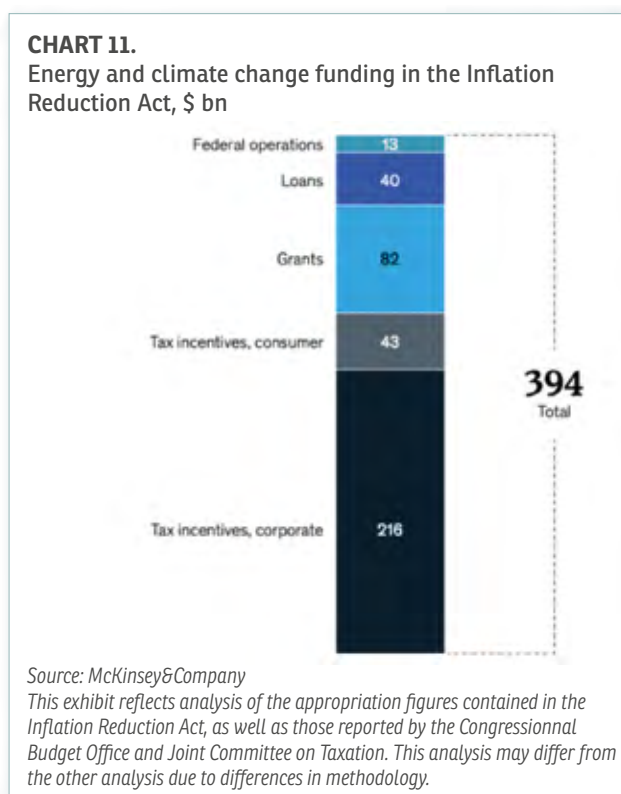
- Attract investments on the US territory to reinforce its industrial fabric,
- Enhance innovation in the US to stay at the edge of the digital transition,
- Reinforce its strategic autonomy by weakening China's position at the global level and avoid supply chains disruptions,
- Lowering prescription drug prices.

To do so, the IRA commits \$400 bn in tax credits, loans and subsidies over the next 10 years. But estimations remain unprecise, and subsidies could tally to up to \$1.2 tn over 10 years, depending on the take up as most measures are not capped. These funds focus on several aspects of the industrial policies: investing in domestic manufacturing capacity, encouraging procurement of critical supplies domestically or from free-trade partners, enhancing R&D and commercialization of leading-edge technologies such as carbon capture and storage and clean hydrogen, allocating money to environmental justice and demonstrating equity impacts.

A central element of the IRA – and the most criticized overseas – is the protectionist measures on which it relies. Indeed, to benefit from IRA funds, Local Content Requirements (LCRs) must be met, which establishes a disloyal competition between the US and its competitors.

One of many examples of LCRs is the fact that half of the subsidy for EVs depends on a minimum percentage of critical minerals being extracted and processed in the US or a country with which the US has a free trade agreement, and the other half on a threshold percentage of battery components being manufactured or assembled in North America. Additionally, the final assembly must take place in North America to qualify to the IRA tax credit.

In that regard, the EGOV³⁶ affirms that LCRs are the



biggest issue with the IRA: “LCRs come in gross violation of the international trade architecture that is enshrined in the WTO statutes, of which the most-favored-nation principle is blatantly disregarded”.

Table 6 shows the sectors in which IRA tax incentives, grants and loans guarantees will be disbursed. A major part of it (\$161 bn) will be directed on clean electricity in the form of tax credit while \$40 bn will be spent on air pollution, transportation and infrastructure. Other expenditure items include individual incentives for clean energy (\$37 bn), tax credit for clean energy production and for fuel and clean vehicles (respectively \$37 bn and \$36 bn).

TABLE 6.
Allocation of the IRA “Climate and Energy” package, \$bn

Category	Value (\$ bn)
Climate and energy	391
Tax credit for production and investment in clean electricity	161
Air pollution, harmful products, transportation and infrastructure	40
Individual incentives for clean energy	37
Tax credit for clean energy production	37
Tax credit for fuel and clean vehicles	36
Conservation, rural development, forests	35
Subsidies and grants from the Energy Ministry for the increasing efficiency and transmission of electrification	27
Other spending for climate and energy	18

Source: Extracted from the paper :
Inflation Reduction Act – Comment l’Union Européenne peut-elle répondre ?”, Policy brief n°40, CEPII, February 2023

36. “EU’s response to the US inflation Reduction Act (IRA)”, briefing by EGOV, September 2023.

It is unarguable that the IRA's primary goal is to provide incentives for private investments, which is a key difference compared to the European approach focusing on public investment: out of the \$393.7 bn allocated to energy and climate funding, \$216 bn will be received by corporations in the form of tax credits³⁷ (see Chart 11). Moreover, \$43 bn in IRA tax credits aim to make EVs, rooftop solar panels and other clean technologies more affordable, and thus to reduce CO2 emissions. For instance, qualifying new EVs will be eligible for a tax credit of up to \$7,500.

2.1.2 The IRA is the third piece of law passed since late 2021 that seeks to improve US economic competitiveness, innovation and industrial productivity

The IRA is part of a wider US plan to assert its leadership position on the economic stage and launch a new era of American industrial policy. Indeed, the IRA joins two other pieces of law that seek to improve economic competitiveness, industrial productivity and innovation in the US.

Firstly, the Bipartisan Infrastructure Law (BIL) voted in November 2021 is a piece of law aiming at rebuilding America's roads, bridges and rails, expanding access to clean drinking water, ensuring that every American has access to high-speed internet, tackling the climate crisis, advancing environmental justice and investing in social justice. Over 10 years, the act should allocate an estimated \$1.2 tn in total funding, of which \$550 bn will be spent on surface-transportation network (\$284 bn) and society's core infrastructure (\$266 bn) over the first five years.

Secondly, the CHIPS and Science Act passed in August 2022 aims at boosting US innovation and competitiveness, as well as enhance US national security regarding semiconductor manufacturing. Out of the \$280 bn dedicated to this act, \$200 bn will be for scientific R&D and commercialization. Additionally, about \$53 bn will go to semiconductor manufacturers, R&D and workforce development and \$24 bn worth of tax credits will enhance chip production. The remaining \$3 bn will be spent on programs aimed at developing leading-edge technology and wireless supply chains. Overall, the goal is to keep the US the leader of the industries of tomorrow, including nanotechnology, clean energy and Artificial Intelligence (AI).

The BIL, the CHIPS and Science Act, and the IRA have partially overlapping priorities and together introduce \$2 tn in new federal spending over the next ten years.

TABLE 7.

The three main pieces of legislation passed by the Biden administration, (in \$bn and %)

	Over 10 years	On average per year	% of 2022 GDP
Inflation Reduction Act	391	39.1	0.2
Chips and Science Act	278	27.8	0.1
Bipartisan Infrastructure Law	1200	120	0.6
Total	1869	186,9	0,9

Source: CEPII¹⁰

Note: only the "climate and energy" part of the IRA was taken into account in this table, because public spending increase for healthcare is estimated to 0.05% of US 2022 GDP per year

Parallely, President Biden has inaugurated on 29 November 2023 a Council on Supply Chain Resilience³⁸. While measures have been taken to bring manufacturing to the US and strengthen supply chains since supply chain bottlenecks peaked during the pandemic, this Council should further work to keep supply chain secure, diversified, and resilient into the future. Both geopolitical and economic benefits are at stake: having secure supply chains *vis-à-vis* China is key in some fields such as medicine and semi-conductor, and avoiding supply chain disruptions such as those suffered during pandemic fostered will minimize inflationary trends.

2.1.3 Firms from all over the world are entitled to receive IRA funds under certain conditions

The IRA favors its territory and people. To fully benefit from full IRA tax credits, industrial manufacturers must meet prevailing wage and apprenticeship requirements; the goal is to build stronger talent pipelines and better-skilled workforce.

Moreover, many IRA-incentives are conditioned to scaling domestic-production or domestic-procurement requirements. Subsidies allocated through the IRA – which represents 0.17% of the US GDP over 10 years – incentivizes foreign companies to relocate their production sites on the American soil, as the allocation of funds is conditioned to certain Local Content Requirements (LCRs).

In that regard, the EVs are an epitome: as mentioned above, to fully benefit from the EV consumer credit of \$7,500, the battery must have been at least assembled in North America, and a scaling percentage of critical minerals in the battery must have been recycled in North America or been extracted in a country that has a free-trade agreement with the US.

37. "The Inflation Reduction Act: Here's what's in it", McKinsey & Company, October 2022.

38. "La Maison-Blanche se transforme en tour de contrôle des chaînes d'approvisionnement", *Les Échos*, 28 November 2023.

Similarly, regarding the electricity production, the \$15 tax credit per MWh is granted to companies that have a carbon-free process, but these \$15 are conditioned to a LCR: companies must use steel, iron or other products that have been extracted in the US³⁹.

The conditionality on the sourcing site of materials and/or on the assembling site have been claimed to go against World Trade Organization (WTO) principles, and to be a disguised protectionist decision. An article from the FT⁴⁰ phrases the contrast in perspective between the US and the rest of the world, especially Europe: "what the US sees as a strategy to reverse deindustrialization in deprived areas, allies have interpreted as a thinly veiled exercise in protectionism because it encourages companies to shift plants and customers to buy American". IRA subsidies are thus distorting trade, but in the particularly tense current economic and geopolitical context, other countries cannot afford to pick a fight with the US and prefer to follow its path regarding industrialization.

2.1.4 The IRA is financed through new corporate taxes and revenues raised by new reforms

According to figured produced by the Congressional Budget Office (CBO) and the Joint Committee on Taxation, the estimated investments made amount to \$369 bn in energy security and the fight against climate change, and \$64 bn in the extension of the Affordable Care Act. The funds will be delivered through a mix of tax incentives, grants and loan guarantees. The same sources estimate the revenue

raised by these investments to amount to \$288 bn through the Prescription Drug Pricing Reform, \$124 bn through IRS Tax enforcement, \$14 bn through efforts to close the Carried Interest Tax loophole and \$313 bn through the establishment of a 15% corporate alternative minimum tax rate for companies with higher than \$1 bn of annual financial statement income⁴¹.

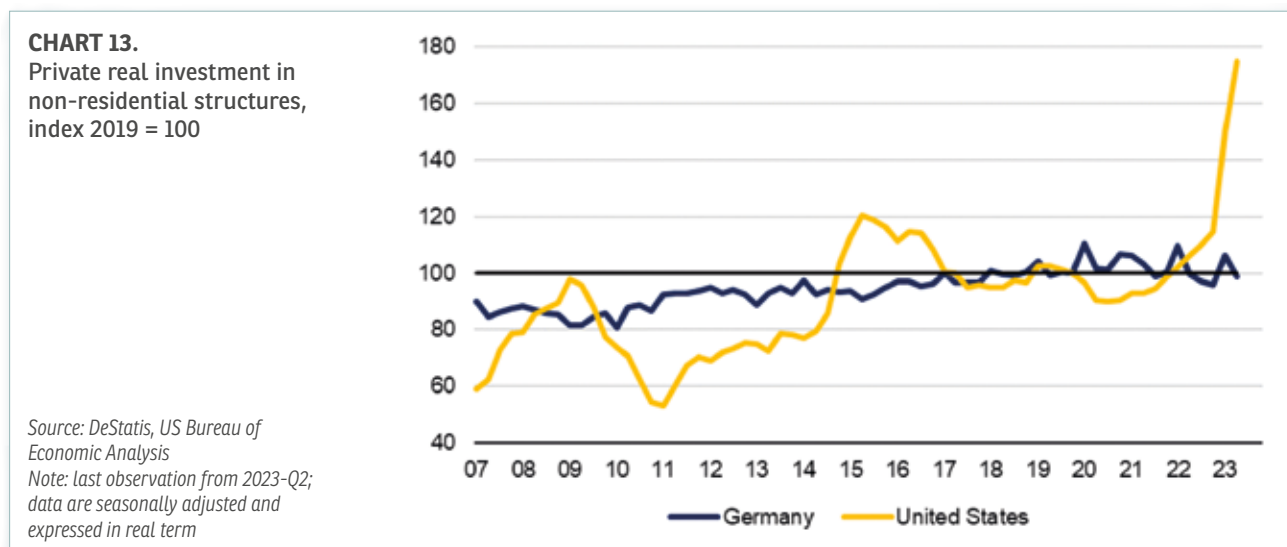
The CBO also estimates that the law will reduce fiscal deficits by \$237 bn over the next decade⁴².

2.2 In one year, the IRA already proved very attractive for both US and foreign companies

As written by G. Moëc⁴³, "the Inflation Reduction Act (IRA) is one of the ingredients of the current resilience of the US economy – showing up for instance in the already visible rebound in manufacturing investments projects – in stark contrast with the increasingly dismal readings on the European economy".

Chart 85 shows the boom in private investment in non-residential structures on the US territory, while Germany – the industrial heart of the European Union – observes a declining trend: between late 2019 and mid 2023, the volume of private investment in progress has increased by 75% in the US while it remained almost unchanged in Germany.

This gap does not seem to affect only Germany insofar as the IMF World Economic Outlook forecast no economic growth in Italy and a decrease from 2.5% in 2023 to 1.7% in 2024 in Spain.



39. Op. Cited CEPII Policy Brief n°40.

40. "A global subsidy war? Keeping up with the Americans", *Financial Times*, 13 July 2023.

41. The IRA imposes a 15% corporate alternative minimum tax on certain corporations ("CAMT"), since Congress focused on the phenomenon of very large publicly traded corporations with significant earnings paying little or no tax, hence the decision to have the CAMT calculated based on book income rather than taxable income.

42. However, as the IRA is uncapped, this figure could be much lower (See 2.3).

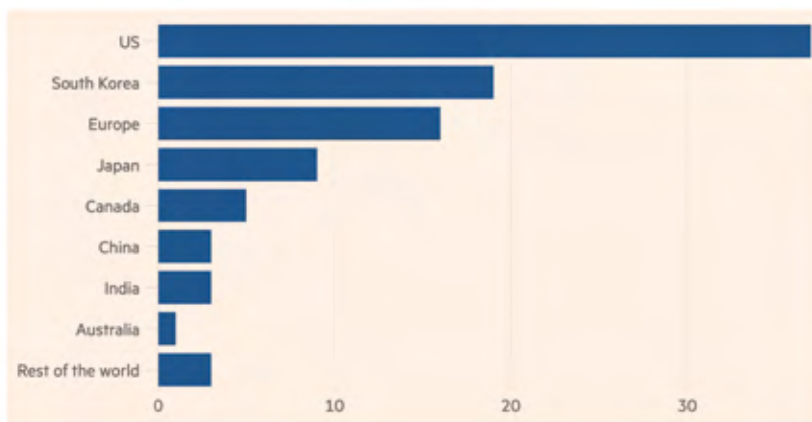
43. G. Moëc, "In defense of Europe's net zero strategy", AXA Macrocast, 20 November 2023.

TABLE 8.
The past year's 10 biggest projects, by announced capital expenditure

Company	Investment (\$bn)	Location	Company HQ
Intel	30	Chandler, AZ	US
Taiwan Semiconductor Manufacturing Company	28	Phoenix, AZ	Taiwan
IBM	20	Hudson Valley, NY	US
Micron	20	Clay, NY	US
Micron	15	Boise, ID	US
Texas Instruments	11	Lehi, UT	US
LG Energy Solution		Queen Creek, AZ	South Korea
Wolfspeed		Chatham County, NC	US
Hyundai and SK On		Bartow County, GA	South Korea
Honda and LG Energy Solution		Fayette County, OH	Japan and South Korea

Source: The Financial Times

CHART 14.
Number of cleantech projects by investor country since August 2022



Source: The Financial Times

Given the conditions to benefit from the IRA mentioned above, the latter seems to be undeniably successful at attracting investors from all around the world.

2.2.1 American firms are massively investing in the US

Out of the 10 biggest investment projects announced in the first year of the IRA, 6 have been made from American companies (see Table 8)⁴⁴.

The largest investment worth \$30 bn is made by American firm Intel to expand a campus in Chandler, Arizona. Among other investments are a \$20 bn investment implemented by IBM to expand the technology ecosystem in New York, and a \$20 bn investment by Micron to build the US's largest semiconductor plan in Clay, New York. Micron also announced an additional \$15 bn investment in Boise, Indiana. Other smaller investments are flourishing, as that of US manufacturer First Solar worth \$1.1 bn to open its fifth factory in Iberia Parish, Louisiana.

But as shown by chart 86, "foreign investors want a stake in US cleantech supply chain"⁴⁵.

2.2.2 A number of foreign companies are shifting their investment plans to the US to benefit from the IRA

"The flurry of projects comes as US allies roll out their own policies to compete with IRA subsidies that they say have created an uneven playing field" experts of the FT wrote. Indeed, while countries are trying to enhance their industrial policies, they also refuse to be distanced by the US and to miss on significant opportunities to secure a stake in the US supply chain.

- **Asian companies are leading the capital influx to the US.**

South Korea makes the running with 20 projects announced in one year, with 3 of them being among the 10 biggest projects (see Table 8). Other important investments have been made by Singapore-based Maxeon Solar Technologies which announced a \$1 bn solar cell and panel facility in Albuquerque,

44. "Inside the \$220 bn American cleantech project boom", *Financial Times*, 16 August 2023.

45. "The impact of the Inflation Reduction Act, one year on", *Financial Times*, 17 August 2023.

CHART 15.
Contracted capacity,
gigawatts



Source: *The Financial Times*

New Mexico, by Taiwan Semiconductor Manufacturing Company with a \$28 bn investment in Phoenix, Arizona, or by Japanese company Toyota which decided an \$8 bn investment in its battery manufacturing plant in North Carolina, where the state offered at least \$900 mn in incentives.

- **Europe is the second largest foreign investors since the passage of the IRA and the Chips Act.**

On the European side, 19 investments over \$100 mn in the US have been registered within the first year of the IRA. This is particularly detrimental to the EU strongest country – Germany – which has the most developed industrial fabric of the Union. For instance, Meyer Burger, a Swiss solar manufacturer, announced last month that it was putting its German expansion plan on hold to open a \$400 mn factory in Colorado to receive tax credits from the IRA. Besides, Dutch-headquartered automotive constructor Stellantis announced in February 2023 a \$155 bn investments to build new plants in Indiana.

An article from the *Financial Times*⁴⁶ also warns on the overall industrial situation of Germany: “even before the IRA came into force, there were signs that investment was flowing out of Germany. Other European firms are willing to invest on the other side of the Atlantic; it is namely the case of the Italian electricity producer Enel which plans to spend \$1 bn in Oklahoma, or the Swedish battery

manufacturer Northvolt which is attracted by a nearly \$8 bn tax credits for its investments on the US territory⁴⁷.

According to a study by the Cologne-based German Economic Institute, the gap between outbound investments by German companies and business investment into the country in 2022 was the largest on record: **more than €135 bn of foreign direct investment flowed out of Germany and only €10.5 bn came in**”.

2.3 Structural headwinds mitigate the success of the IRA

The deeply optimistic assessment of the IRA is counterbalanced by the fact that not all the investment projects announced end up materializing in the US. Indeed, major investments have been cancelled in the recent weeks, and this could potentially hinder the swift decarbonization of the US economy intended by the IRA.

An article from *the Financial Times*⁴⁸ listed several cancellations of projects in the green energy sector. Namely, the global leader in offshore wind energy Ørsted abandoned two projects aiming at delivering 2.2 gigawatts of power to New Jersey early November, Navigator CO2 cancelled its \$3 bn project regarding carbon capture and storage in October, and Ford announced pushing back its \$12 bn in Electric Vehicles investments.

46. “A global subsidy war? Keeping up with the Americans”, *Financial Times*, 13 July 2023.

47. “Industries vertes: face à l’Europe, l’Amérique de Biden prend l’avantage”, *Le Figaro*, 7 July 2023.

48. “Green energy investment headwinds threaten Joe Biden’s climate targets”, *Financial Times*, 4 November 2023.

Several reasons are accountable for these cancellations. Among them are “high interest rates, supply chain constraints and impediments to permitting new infrastructure. Certain projects have also stalled due to a lack of guidance on tax rules and strict domestic content provisions in the new law”⁴⁹.

Additionally, the clean energy sector remains expensive, and uncertainty about the future is making companies question their investments as evidenced by Chart 15: at least 2 projects have been fully cancelled, and more than 2/3 of Ørsted's massive project has been cancelled as well. Besides, 4 other projects representing about 6.5 gigawatts are expected to be renegotiated.

On the one hand, US offshore wind sector is currently at risk as “more than half of all US offshore wind contracts have been terminated this year or are at risk of being ended”, which threatens the Biden administration's ambition to deploy 30 GW of offshore wind power by 2030. On the other hand, “large-scale wind and solar projects built on land have been hit by financing costs related to interest rates and a cumbersome process to connect far-flung generation to electric grid”. Indeed, it took only three years in 2015 from the interconnection request to commercial operations for such projects, against five years in 2022, indicating that “the backlog is worsening as more projects are attracted due to the incentives in the IRA”.

Regarding the strained profitability of projects, there are two main explanations. On the one hand, costs have exploded due to the rise in costs of steel, copper and other scarce metals that are necessary to build wind turbine. On the other hand, governments refuse to increase the price of electricity in order to protect the consumers. Other logistic issues such as the lack of port capacity to berth a boat transporting wind turbines have been brought to explain the termination of some contracts.

The offshore wind sector is not only floundering in the US. Indeed, a recent podcast by F. Lenglet⁵⁰ explained that there was a bubble asset on windmill project and that it has burst, leading a significant number of projects to be interrupted or cancelled and crippling the commitment of countries of Northern Europe to multiply by 10 their offshore wind production within the coming years.

Other headwinds are visible in the EV sector⁵¹. First, the transition to EV has become highly political and polarized: EVs represented between 14% and 25% of car sales in Democrat states such as California,

Washington and Oregon while it represented less than 2% in Republican state like Oklahoma, Western Virginia and Mississippi. The conditions imposed by the IRA to be eligible to the \$7,500 tax credit have also led carmakers to rethink their strategy. Indeed, the price of qualifying new EVs is capped at \$55,000 and this drives prices down, implying profitability issues for manufacturers who are consequently forced to cancel or delay their investment projects.

Moreover, the protectionist-inspired conditions to get IRA funds could end up being a hurdle for companies to meet demand for critical minerals such as nickel by exclusively relying on domestic sources and free-trade partners.

Eventually, the IRA could also become the victim of its own success in the coming years. Firstly, with little constraints on tax credits, an increasing amount of companies are benefiting from them, which could significantly raise the bill of the IRA over 10 years, and could push federal debt higher. In that regard, the IMF forecast the US public deficit to remain above 5.5% of its GDP for the next ten years – with the IMF announcing a public deficit between 7.5% and 8.2% of GDP in 2023, and debt could go as high as 138% of GDP in 2028⁵².

Furthermore, the US could face a lack of skilled workers and raw material constraints⁵³. In that regard, the FT wrote that “more than 1mn US jobs for computer scientists and engineers risk going unfilled by the end of the decade (...) and the US faces a shortfall of 500,000 construction workers this year alone as it tries to meet demand fueled by the new factory announcements”.

3. The EU seems to be distanced by the US in the race to clean energy, competitiveness, and industry

Even if NGEU, was launched two years prior to the voting of the IRA, and that the EU has afterwards launched other initiatives such as REPowerEU and the GDIP, the EU seems to fall behind the US in the race to clean energy, competitiveness and industry. This part shows that both external and inherent features of the EU can explain that the latter is lagging behind the US: the current global context is more favorable to the US than to the EU, and the American instruments seem also more efficient than in the EU.

49. “Green energy investment headwinds threaten Joe Biden's climate targets”, *Financial Times*, 4 November 2023.

50. F. Lenglet, “Mauvais vent sur les éoliennes: la bulle spéculative explose !”, RTL, 23 November 2023.

51. “L'Amérique se divise aussi sur la voiture électrique”, *Le Figaro*, 17 November 2023.

52. “Pourquoi les États-Unis s'endettent à tour de bras”, *Les Échos*, 28 November 2023.

53. “Inside the \$220 bn American cleantech project boom”, *Financial Times*, 16 August 2023.

The second half of this part focuses on recommendations for the EU to improve its competitiveness and its overall economic health to fully reap the benefits of NGEU.

3.1 Global context is more favorable to the US than to the EU

The EU has been through a sequence of crises over the past few years that have further exacerbated existing detrimental trends in various areas of the economy⁵⁴. Listed below are the different elements of the global context which are undeniably hampering the reindustrialization of Europe and undermining the effects of the massive investments under NGEU.

- **The EU has suffered from importing energy at very high prices**

"European industry has long struggled with energy prices substantially higher than in the US and parts of Asia. Over the 10 years to 2020, European gas price were on average two to three times higher than the US, according to the International Energy Agency".

Besides, the major difference between the United States and the Euro area is that the former produces its energy, whereas the latter imports it. Therefore, contrary to EU countries, the US has not experienced any external shocks and benefits from an external surplus for energy; this is a very different situation from that of Europe, which saw its energy price explode.

Therefore, one of the motivations of REPowerEU – and to a lesser degree of NGEU – is to reduce Europe's dependency on fossil energy and thus re-establish a more favorable trade balance while reinforcing its open strategic autonomy.

- **The EU has few raw material resources**

Commodities on Europe's territory are scarce. Oil, natural gas and metals are at the basis of industrial production; the insufficient level of supply of such resources to respond to the demand forces the EU to import them. This has a double effect: 1) it leads to poor trade balances, and 2) it makes the EU dependent on the rest of the world for its consumption of raw materials, which hampers the objective of open strategic autonomy.

This is all the more problematic as the EGD, the

FF55 and REPowerEU involve "an unprecedented increase in cleantech components and raw materials needs. The demand for batteries for electric storage and electric mobility could increase fourfold by 2030 and more than sevenfold by 2035. This implies a growth in demand for strategic materials such as lithium, graphite, cobalt, nickel or manganese"⁵⁵.

- **Europe's ageing population is not attractive for companies**

Demographics in the Eurozone are less dynamic than in the US⁵⁶, leading to a future decline in labor force that will reduce potential production, tax revenues, etc.

Additionally, Europe's ageing population does not make it very attractive to establish new industrial production capacity, especially as it gives rise to structural recruitment difficulties.

- **The workforce is cheaper, better-skilled, more productive in the US than in the EU**

Labor productivity increased by only 14% in the Eurozone between 1998 and Q3 2022 compared to 62% in the US. Reasons explaining this gap includes better education, higher spending on R&D and a larger volume of hours worked in the US. Additionally, though European workforce seem less performing than the American one, unit labor costs are rising much faster in the EU than in the US, further increasing the costs for companies in the EU.

- **High public debt and fiscal deficits in the EU hampers competitiveness and effectiveness of companies**

Unlike the United States, the Eurozone countries do not issue the world's currency. The overall economic and fiscal health of certain EU Member States are further hurdles to their reindustrialization and attractiveness. Indeed, as long as no structural reforms are steered, high public debt as well as important fiscal deficits are limiting the possibility of the most highly indebted countries to help reindustrialization through public funding⁵⁷. In that respect, the RRF is trying to link the approval of recovery and resilience plans to the country-specific recommendations whereby Member States needed to include structural reforms in their plans to address long standing issues, among which fiscal sustainability.

54. See Eurofi Macroeconomic Scoreboard.

55. Op. Cited Jacques Delors Institute.

56. America's working age population – those between 25 and 64 – rose from 127 million in 1990 to 175 million in 2022, an increase of 38%. By contrast, in Western Europe, the working-age population rose by 9% during that period, from 94 million to 102 million. Source: *Eurofi Macroeconomic scoreboard*, September 2023.

57. See 3.3.

- **Germany, the manufacturing pillar of Europe, is being forced to review its growth model and has been in recession in 2023.**

Germany needs to review its industrial model which was built on low-cost energy imported from Russia and dependent on its exports particularly from China. The ability to increase fiscal deficits to support companies, the strong industrial culture, and the high skills of the population point to a temporary weakness in growth. But population ageing, stagnant productivity, the cost of the energy transition and competitiveness problems could lead to lasting weak growth.

All in all, European firms face costs explosion in terms of energy, skilled labor, tax law and environmental regulations, while simultaneously, the US and China fight to attract industrial activities and employment.

It has to be emphasized that the industrial decline of the EU started decades ago; as written in a recent article of the Financial Times⁵⁸, "one moment of truth for the EU was in the early 2000s, when the internet technology boom created dozens of major US conglomerates, but hardly any in Europe. In the decades since, EU companies have failed to come even close to the likes of Apple, Alphabet or Amazon, or challenge the scale of Chinese rivals such as Alibaba. Now EU policymakers are very concerned that the next technology revolution – in artificial intelligence and quantum computing – will similarly pass Europe by and further widen the gulf with the world's two economic superpowers".

3.2 The US employs instruments that are more efficient than the EU, and qualitative differences in the approaches are also observed

The IRA is very attractive for firms worldwide, and its success relies on various elements. First, the focus is on the market, firms and private investment. The US benefits from a genuine single market that enables companies to achieve economies of scale. The focus of NGEU is on EU Member States and public investment rather than the single market. Moreover, the IRA resort to massive tax credits, which cannot be implemented in the EU because tax policies remain national.

Besides, the US has a genuine industrial policy: the IRA includes Local Content Requirements (LCRs) that automatically favor the US over international competitors and attracts companies which want to benefit from IRA subventions. In that regard, the US has already favored its national economy for almost a century with the *Buy American Act* of

1933 which requires the US government and third parties to prefer US-made products in its purchases, with legal requirements changing according to sector, price and competition.

This is in profound contrast with the European approach regarding industrial policy: for decades, the EU has favored competition policy and free trade over having a genuine industrial policy with a community preference. This absence of EU industrial policy is reflected in the current struggles in the progress of NGEU.

Additionally, one of the main differences between the IRA and NGEU is that the former massively grants subsidies and tax credits to private companies and citizens, while the latter follows a bureaucratic intermediated procedure where the Commission distributes grants and loans to national public authorities which then award it to private sector agents.

This burdens the efficiency and the speed of the fund allocation and disbursement, even if it is true that the disbursement by the Commission is made upon evidence that milestones and targets – e.g. signature of contracts/grant awards – have been fulfilled and thus that Member States have supported private companies and citizens. While everything is centralized in Europe, IRA funds swiftly and efficiently flow through more than a dozen federal agencies, with 5 main agencies handling 96% of the funding.

Furthermore, available IRA funds are spent almost immediately while halfway through its lifetime, only one third of NGEU funds have been spend. Indeed, the Member States – which have never before benefited from so much money – seem to be struggling to absorb all the funds made available to them.

3.3 Highly indebted Member States need to review the composition of public spending and favor quality over quantity in order to have new margin to increase productive public investment

Eurofi's Macroeconomic Scoreboard shows that EU countries with the highest level of government expenditure as percentage of GDP are those with the least competitive firms and that excessive level of public debt does not fuel productivity growth and employment. In such a context, it has become urgent to achieve a credible and ambitious EU agreement on the review of the Stability and Growth Pact in order to achieve sufficient fiscal discipline in all parts of the EU.

In that regard, D. Cahen and J. de Larosière made some recommendations⁵⁹.

58. "EU's plan to regain its competitive edge", *Financial Times*, 5 November 2023.

59. D. Cahen & J. de Larosière, "Reforming the Stability and Growth Pact", *Eurofi Regulatory Update*, April 2023.

3.3.1 Public investments should not be excluded from a country's deficit and debt calculations

There are huge public spending needs, given new investments for the green and digital transitions, education, and healthcare. But a special treatment for growth-enhancing expenditure would not be helpful. It comes from the illusion that public financial means are not scarce. In reality, it is a matter of refocusing the priorities. Unproductive spending needs to be replaced by productive public spending.

It would be a grave mistake to push the extreme fiscal limits in the present situation. Investment-friendly rules – such as the golden rule to protect public investment implying a separate capital account – can lead to excessive borrowing and weaken the link between fiscal targets and debt dynamics, fostering potential risks to debt sustainability. In addition, as stated by an ESM paper⁶⁰, “creative accounting and the reclassification of unproductive expenditures as investments to circumvent rules could challenge monitoring and enforcement, alienate the targets from the numbers and reduce transparency”.

Strong fiscal positions are needed to face the challenges of infrastructure investments and ecological policies. The last thing needed would be to deteriorate current imbalances budgets.

The future depends on:

- a consolidation of present weak fiscal positions,
- a shift toward quality of expenditure and investment.

With the amount of liquidity created in the past years, no more redistributive expenses are required. The latter must be reined in and adequate space for public investment must be allowed.

3.3.2 The quality of public spending and composition of public finances must prevail over quantity

Fiscal policy should ensure a composition of public finances that is both growth-friendly and sustainable. It has to be recognized that the shift towards more productive investment will require substantial political effort because presently public investment only accounts for some 4% of GDP while current expenditure represent almost all public expenditure.

In this perspective, putting in place early warning mechanisms to prevent unsustainable public finance trajectories would be required. Indeed, a country whose share of public expenditure reaches record levels in relation to the European average should be subject to special discipline.

The fact that money has been thrown at problems for years has worked against supply-side policy. In order to raise growth potential, it is necessary to deal not only with stimulating demand and reducing unemployment but also boosting productive investment and productivity gains, which have been the orphans of this story.

In an extreme case, stimulating demand does not translate into increased production, but leads to a widening of our trade deficit if countries do not have efficient production systems. In this respect, the quality of public spending has become an absolute imperative: as much as we need to fight against unproductive spending, we can encourage the financing of infrastructure spending (including research) that can be financed by debt.

3.4 The EU needs to design and implement a genuine industrial policy

3.4.1 The EU needs appropriate competition rules to boost its industry

The recent paper of the European RoundTable⁶¹ (ERT) reminds us that the EU's competition policy is an essential pillar of a comprehensive industrial strategy for the Union. The Commission should assertively deliver a competition policy that reinforces the role of open markets and incentivizes European firms to compete effectively, both across the internal market and on the global stage. Such a policy should also foster the emergence of European industrial and financial champions able to compete on the international stage: merger decisions should seek the benefits for the entire single market, not only the markets of individual Member States and should be assessed regarding global competition and trends.

An effective industrial policy could also rely on state aid for early stage innovations for the digital and green transitions as well as for key strategic sectors when market forces alone are insufficient. The EU must offer faster and more efficient procedures to entice European companies to invest at home rather than being lured away by attractive and unbureaucratic incentives in the US and elsewhere.

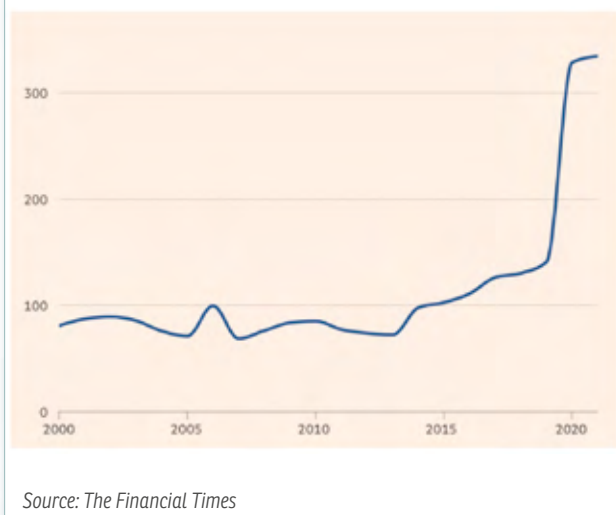
3.4.2 State aid rules must be carefully relaxed insofar as they could jeopardize the Single Market because Member States have diverging fiscal capacities

In the EU, tax policy remains the preserve of Member States so it has relaxed rules on state aid to deter companies from redirecting investment to

60. "EU fiscal rules: reform considerations", ESM Discussion Paper 17, October 2021.

61. "Securing Europe's place in a new world order", ERT Vision Paper. 2024-2029, 26 October 2023.

CHART 16.
Total state aid by EU27 countries (€bn)



the US⁶². Indeed, the Temporary Crisis and Transition Framework (TCTF) of March 2023 can be seen as a European response to the financing gap between the EU and the IRA.

In the wake of the Covid-19 and Russia's invasion of Ukraine, Brussels decided economic emergency measures and abandoned the single rule book: rules on the permissibility of state aid and national subsidies were lifted and EU oversight of its members' deficits and debts were suspended. But the FT reminds us that **"the EU's state aid rules were drawn up to protect poorer states with less fiscal firepower from the richer states that would otherwise be able to pump cash into their national champions and give them an unfair advantage.** That, say some officials from mainly southern and eastern countries, is exactly what has happened.

Governments in countries such as Germany and France, in the name of economic stability for the entire bloc, have given their own companies the financial clout to outcompete their EU rivals, trampling on the safeguards of the single market in the meantime⁶³. Indeed, France and Germany accounted for half of the €733 bn in state support that Europe approved between March 2022 and August 2023. **The state aid explosion showed by Chart 16 has thus given Member States, particularly richer ones, the incentive to keep the rules as they are, but this situation also brings about fundamental disequilibria insofar as fiscally sound Member States can afford to provide financial assistance to their economies, while fiscally weak countries cannot, which worsens the**

existing heterogeneities within the Union. Therefore, without adequate safeguards and limits, a relaxation too loose risks fragmenting the Single Market.

EGOV (the think tank of the European Parliament) deems that in the continuity of the pandemic and the War in Ukraine, "the EU, to counter the IRA's negative effects on EU industry, decided upon additional support to industry to be made available through the relaxation of EU state aid rules. This is based on an extension of the more generous application of state aid rules in response to the Russian invasion of Ukraine, for which the Temporary Crisis Framework was created in March 2022. On 9 March 2023, its latest modification transformed it into the Temporary Crisis and Transition Framework (TCTF), which *de facto* also made it a response to the IRA. The framework uses the flexibility foreseen under state aid rules to support the economy. In 2022, the Commission declared specific categories of state aid compatible with the Treaty if they fulfil certain conditions"⁶⁴.

However, the Agefi warns that, as there is no European fiscal capacity, a generalized relaxation of the state aid rule risks jeopardizing the single market because Member States have diverging fiscal capacities⁶⁵. In the same spirit, Belgian Prime Minister A. de Croo told the Financial Times⁶⁶ that "the EU's policy of relaxing state aid rules is the exact opposite of what is needed to regain competitiveness in response to high energy costs and generous US tax breaks" and that "the EU should instead deepen its single market and put in place bloc-wide incentives for industry".

3.4.3 IPCEIs should be continued and enhanced

Important Projects of Common European Interest (IPCEIs) are useful instruments that enable Member States and the EU to support certain industries without going against international competition rules. It relies on a bottom-up approach insofar as private companies are involved in the projects since their beginning, and Member States remain the drivers of the projects all along.

IPCEIs were created in 2014 and allow firms to receive state aid under the EU state aid rules in complement to private funding in order to promote innovation in strategic industrial sectors.

They have known an increasing success since 2018: at least one IPCEIs has been approved each year by the Commission since 2018, with significant

62. "Industrialists call for deeper political union in the EU on energy", *Financial Times*, 14 November 2023.

63. Op. Cited FT.

64. "EU's response to the US Inflation Reduction Act (IRA)", briefing by the think tank of the European Parliament, September 2023.

65. "Les aides d'État restent sous contrôle étroit en Europe", Agefi, 30 August 2023.

66. "More state aid will not help Europe compete, warns Belgian PM", *Financial Times*, 5 December 2023.

CHART 17.
Approved IPCEIs

	First IPCEI on Microelectronics (2018)	First IPCEI on Batteries (2019)	IPCEI Fehmarn Belt fixed rail-road link (2020)	Second IPCEI on Batteries – EuBatIn (2021)	First hydrogen IPCEI – Hy2Tech (2022)	Second hydrogen IPCEI – Hy2Use (2022)	Second IPCEI on Microelectronics and Communication Technologies (2023)	Total
Participating companies	29	17	1	42	35	29	56	209 180*
Participating projects	43	22	1	46	41	35	68	256
State aid approved (EUR billion)	1,9	3,2	9,4	2,9	5,4	5,2	8,1	36,1
Expected private investments (EUR billion)	6,5	5	NA**	9	8,8	7	13,7	50
Participating Member States								21 with UK included as a Member State, plus Norway participated in at least one IPCEI

*Excluding the companies that participated in more than one IPCEI **A study confirmed this projects creates a positive socio-economic return for the entire EU

Source: European Commission

amounts engaged: the approved state aid along with the expected private investments into research and development of the 7 IPCEIs so far add up to almost €80 bn. Moreover, the increase in the number of participating Member States and companies observable in Chart 17 shows a positive trend. IPCEIs are also supported as part of the NRRPs.

Six approved IPCEIs falls into three categories: microelectronics value chain, batteries value chain and hydrogen value chain. A seventh IPCEI has been approved to enhance the territorial integration of the EU.

Microelectronics value chain

So far, two IPCEIs in the microelectronics value chain have been launched. These IPCEIs comprise 100 projects in 14 Member States including up to €10 bn state aid which is expected to unlock more than €20.2 bn of additional private investment.

32 companies from 5 Member States take part in the first IPCEIs on Microelectronics that was approved on 18 December 2018. The project’s overall objective is to enable research and develop innovative technologies and components that can be integrated in a large set of downstream applications such as energy efficient chips, power semiconductors, compound materials, advanced optical equipment and smart sensors.

The second IPCEIs in the field of microelectronics was approved on 8 June 2023, focuses on communication technologies, and involves 68 projects from 56 companies coming from 14 Member States. The project’s overall objective is

to enable digital and green transformation by creating innovative microelectronics and communication solutions and developing energy-efficient and resource-saving electronics systems and manufacturing methods.

Batteries value chain

So far, two IPCEIs in the ecosystem of batteries have been launched. These IPCEIs include 59 companies in 12 Member States including up to €6.1 bn state aid which is supposed to trigger more than €13.8 bn of additional private investment.

17 companies from 7 Member States have come together for the first IPCEI in the field of batteries approved by the Commission on 9 December 2019. The project focuses on research and development activities to deliver beyond state-of-the-art innovation across the batteries value chain, from mining and processing the raw materials, production of advanced chemical materials, the design of battery cells and modules and their integration into smart systems, to the recycling and repurposing of used batteries.

The second IPCEI on batteries is called European Battery Innovation (EuBatIn) and was approved on 26 January 2021. 42 companies from 12 Member States are participating in this project. The IPCEI EuBatIn will cover the entire battery value chain from extraction of raw materials to recycling and disposing the batteries with a strong focus on sustainability.

Hydrogen value chain

So far, two IPCEIs in the hydrogen value chain have been launched. The two IPCEIs include 59

companies in 16 Member States and Norway including up to 10.6 bn state aid which is expected to unlock more than €15.8 bn of additional private investment.

The first hydrogen IPCEI Hy2Tech was approved on 15 July 2022 and gathers 35 companies from 15 Member States. The project's objective is to contribute to the development of important technological breakthroughs in the hydrogen technology value chain.

The second hydrogen IPCEI Hy2Use was approved on 21 September 2022 and gathers 29 companies coming from 13 Member States.

Fehmarn Belt fixed rail-road link

A seventh IPCEI has been approved on 20 March 2020: the Fehmarn Belt fixed rail-road link, which is key in the cross-border integration of central and northern Europe. The Fehmarn Belt coast-to-coast infrastructure which will link Denmark and Germany and

IPCEIs are key strategic instruments with regards to the implementation of the EU Industrial Strategy. An IPCEI brings together knowledge, expertise, financial resources and economic actors throughout the union, as to overcome important market or systemic failures and societal challenges which could not otherwise be addressed.

Since IPCEIs are supported from national budgets, Member States are in the driving seat to form an IPCEI, identify the scope of the projects and select participating companies and projects. A centrally EU IPCEI fund does not exist, but IPCEIs require the approval of the European Commission under state aid law.

IPCEIs are a way forward towards a European industrial policy and enhance the competitiveness of the Union at a time where it most needs it. As P. Gentiloni told *Le Monde*⁶⁷, the EU "will not win the race to competitiveness only with regulations". IPCEIs are a promising way forward and could be extended to other strategic sectors such as health, solar panels and even a European cloud. But uncertainty remains around the financing of such initiatives: is more common debt the key? Only the reimbursement of NGEU will tell if a European fiscal union can emerge, or if it is doomed to remain a pipe dream.

3.4.4 The EU needs to accelerate the single market while re-establishing a community preference

With the Single Act of 1986, the EU has abandoned the community preference, and this limitless

openness of trade has undoubtedly contributed to the weakening of industries in certain EU countries. However, experts such as French Nobel Prize of Economics M. Allais warned in the early 2000s about the threats of an unregulated economic globalization and the detrimental effects it would have on the various regions of the world, with a focus on European Union. He advocated in his work **the need to build a European community based on a democratic political structure as well as on a community preference and an appropriate protection of the community single market**. He also suggested that the European Treaties, especially the Article 10 of the Treaty of Rome, were revised as to introduce a reasonable level of protectionist that would always put the best interest of the European community first. His proposal was the following: "In order to safeguard the harmonious development of world trade, a reasonable community protection must be ensured regarding imports from countries whose exchange rate wage levels are incompatible with the abolition of all customs protection".

Furthermore, the potential of the single market has not yet been fully tapped. Indeed, the IMF estimates that further integration of the single market would enable the EU to gain up to 7 pp of GDP. In that respect, the ERT⁶⁸ made some recommendations to remove single market barriers: "the European Commission must spearhead an 'encompassing program' to shape a common market across all policy areas, including energy, digital, capital, environment and defense. It should proactively compel EU Member States to promptly remove unlawful or unreasonable barriers and burdens *via* mechanisms like the European Semester, guaranteeing the free circulation of goods, services, people, capital and data. There should also be a concerted effort to harmonize and simplify the implementation of EU Regulations, Directives and Delegated Acts, as fragmentation makes it difficult for businesses to compete fairly across the single market". A collaborative and genuine single market would be beneficial for the overall union and to secure Europe's place in the new world order.

The growing inequalities both at regional and global levels as well as the fierce competition that put pressure on workers and the environment are increasingly observable. Re-establishing a community preference in Europe would also reinforce the development of a European industrial policy, the multiplication of IPCEIs and the emergence of European industrial companies. It also seems to be an adequate response to the LCRs at the heart of the American IRA.

67. "L'Europe a un problème de compétitivité", *Le Monde*, 17 November 2023.

68. Op. Cited ERT Vision Paper 2024-2029.

To conclude, several salient points must be emphasized.

To date, the main issue in the EU is not essentially one of financing, but of carrying out investments that could consequently give rise to a need for financing.

With €370 bn of excess savings in 2023, Europe has significant financial resources to engage in the green and digital transitions but lacks adequate investment projects in spite of the different EU plans that have been launched over the past years. In other words, the additional financing needs assumed according to the Commission's calculations for additional investments in the climate transition (+€350 m/year) and digitalization (+€150 bn/year), have not materialized, as investments have remained stagnant.

With regard to the ecological transition, all public and private reports confirm that the EU is still a long way from the levels of investment required to meet commitments (FF55). Roughly speaking, to successfully achieve the transition, the investment efforts should be multiplied by 2 to 3. For this to work, a positive investment-financing feedback loop would have to be triggered. This is what the US has achieved with the IRA. What is puzzling is that they have attracted including European companies on their territory – all the more since energy prices are cheaper on their side of the Atlantic!

The multiplication of European investment plans over the past years underlines the EU's standardization effort. In addition, the RRF is a well-designed innovative performance-based instrument which combines reforms and investments, emphasizing the effort of the Commission to get results. Furthermore, the RRF offers one more advantage to Member States: expenditure financed by RRF grants does not add to national debt and deficits, and thus provides an important support to high-quality investments and reforms without subtracting from the available fiscal space.

Nonetheless, external factors tend to limit the speed and the impact of the program. **NGEU lacks European design.** Indeed, the solidarity and ambition demonstrated in NGEU are undermined by the Recovery and Resilience Plan being fragmented along national lines. 27 national plans have been submitted to the Commission with no enhanced cross-border dimension, even though Member States have similar needs regarding the digital and green transitions.

When qualitatively comparing NGEU and the American IRA, one thing is striking: the American

funds are easily and quickly accessible and work as an incentive to achieve the fixed objectives, whereas national and European bureaucracies make the progress of spending NGEU funds cumbersome and relies heavily on prohibitive rules. In that respect, some experts also pointed out to the fact that the EU does not have the fiscal means of the US, and therefore needs to rely much more on the approach of ETS combined with a well-designed subsidy/industrial support.

The speed of deployment of the IRA and the whopping number of companies that have announced investments on the American soil indicates the success and the simplicity of the IRA one year on. By contrast, the deployment of NGEU is slower as it is impeded by the lack of skilled workforce and the burden of bureaucracy.

Moreover, NGEU does not reap the full benefits of the European single market. This is less attractive for investors than the vast and unified American single market which offers significant opportunities and economies of scale. As a result, 30.5% has been spent halfway through the lifetime of the project. Additionally, some European companies have been attracted by the IRA and have thus shifted investment to the US, including Total Energies, MBW and Northvolt.

In light of this situation, what should be done?

a. Rewarding risk taking and long-term investment.

Long-term investments incur a risk – especially linked to technological and regulatory updates, as well as uncertainty – and demands the immobilization of resources in the long run. The development of technologies necessary to the green transition thus requires investments in R&D, as explained by a recent study from McKinsey & Company⁶⁹: “40 to 50 percent of the emissions reductions needed by 2050 are expected to come from technologies that are currently in the early market stage (for example, lithium-ion energy storage, onshore wind power, and passenger battery EVs)”. But those investments involve a risk.

Therefore, risk-taking must be rewarded, otherwise private savings will remain liquid and will not be directed towards long-term productive investments in the EU. This has not been the case over the past 15 years as real interest rates have remained close to – and even under – zero.

b. Giving certainty to transition pathway in the EU.

EU Member States should give all economic agents clear and complete national transition scenarios (sectoral priorities, timetables, risk edging mecha-

69. “An affordable, reliable, competitive path to net zero”, McKinsey & Company, 30 November 2023.

nisms) and guidelines so that citizens, companies and public authorities make coordinated progress.

c. Getting public finances back in order.

The sooner we get public finances back in order, the sooner states will regain the leeway they need to invest. In addition, over-indebted Member States must also revise the composition of public spending to accentuate the efforts in the fields at the heart of the transitions – *i.e.* R&D and carry out supply-side-oriented reforms to reinforce their production system and rekindle their industrial power.

d. Elaborating a genuine European industrial policy to face common challenges.

To avoid lagging behind the US and China, the EU needs to adopt a genuine industrial policy. To do so, the EU needs appropriate competition policy to boost its industry, foster the emergence of European industrial and financial champions and to accelerate the single market while re-establishing a community preference. The IMF estimates that further integration of the single market would enable the EU to gain up to 7pp of GDP.

e. Developing European projects financed by European companies.

What the EU needs now is to finance common European projects led by European companies.

As highlighted by P. Gentiloni⁷⁰, NGEU has been designed like a solidarity tool that enabled to give more funds to countries that suffered more from the pandemic. But today, Europe should finance common European projects, hence the necessity to implement a genuine industrial policy, especially in strategic sectors such as digital, energy, cleantech space...

The multiplication of IPCEIs and collaborative projects between Member States is undeniably a way forward, given that they align their objectives, they identify qualifying and profitable projects and that they find adequate funding. This would facilitate and foster the emergence of competitive European companies as they would benefit from economies of scale in the single market.

f. Balancing national and common interests in the EU

There is an urgent need to find the right balance between national and common interests in the EU economic, financial and industrial areas.

Recent events seem to show that industrial and economic nationalism is rising in Member States, which further thwarts the efforts towards more integration in the industrial field. For instance, Italy

blocked in November 2023 the \$1.8 bn acquisition by French jet engine maker Safran of the flight control business of Collins Aerospace called Microtecnica. Italy alleged that the deal “poses an exceptional threat to the essential interests of national defense and security”⁷¹ because Microtecnica produces and delivers spare parts to the Eurofighter and Tornado jet fighter programs which are needed to comply with the operational requirements of Nato. “This is a very bad signal sent by Italy and Germany for the future of European defense collaboration” lamented Safran CEO O. Andriès.

This growing economic nationalism – fostered by rising nationalists parties in some EU Member States – hinders the progress of the EU towards open strategic autonomy and towards more integration in key sectors such as industry, finance and defense. Even if it is understandable that each Member State wants to keep their sovereignty, they cannot have it both ways. There is an urgent need to find the right balance between national and common interests.

Additionally, as explained in the paper, NGEU is undermined by its complex and bureaucratic procedure, the lack of skilled workforce in public administration, Member States’ limited absorption capacity and uncertainty around the reimbursement terms of the common debt

70. Op. Cited *Le Monde*.

71. “Italy blocks Safran deal over national security concerns”, *Financial Times*, 21 November 2023.