



Fostering Sustainability in Small and Medium-sized Enterprises

Generali SME EnterPRIZE White Paper

2ND EDITION

SDA Bocconi
SCHOOL OF MANAGEMENT
SUSTAINABILITY LAB

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Czech Presidency of the Council
of the European Union



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FOREWORD

Generali Group CEO - Philippe Donnet

Over the past several months, just as our countries and businesses were gradually recovering from the Covid-19 pandemic, we witnessed the rise of yet other global critical challenges.

From a geopolitical standpoint, the Russian invasion of Ukraine not only brought war back into the heart of Europe, but it also led to an energy crisis that will impact households and businesses in the months to come. At the same time, higher-than-expected inflation is moving hand in hand with weaker economic growth across all major economies, and, according to the latest forecasts, this slowdown is set to continue even into 2023. Last but certainly not least, we cannot ignore the effects of climate change, with greenhouse gas concentrations rising to record highs and fossil fuel emission reaching pre-pandemic levels.

This is a stark reminder, once again, of the vital need to scale up action against this unprecedented threat both to human wellbeing and our planet as a whole.

The backbone of European economies, small- and medium-sized enterprises are currently and will continue to be affected by this challenging context in terms of energy and the rising cost-of-living. In such a scenario, where business continuity and “the bottom line” inevitably become their utmost priority, the development and implementation of ESG practices could be perceived as a costly ‘nice to have’ that will not ultimately contribute to revenue generation, or at least not in the short term.

This is something we have already witnessed when the Covid-19 crisis began, and it is also one of the findings of the survey found in the first chapter of this second edition of the Generali SME EnterPRIZE White Paper, *Fostering Sustainability in Small- and Medium-sized Enterprises*.

In fact, the interviews that were conducted by the researchers of SDA Bocconi Sustainability Lab on a sample of a thousand SMEs in selected European countries show that 43% of surveyed SMEs are currently “unwilling” to commit on sustainability-related issues. But, on the other hand, 41% of them have already formalized a sustainability strategy/plan or are about to do so, and around 15% are still undecided.

At Generali, we strongly believe that it is in the best interest of SMEs to embark on their own sustainability journey, even in challenging times like those today, and this is why we are committed to being there for these companies throughout this process.

Last year’s edition of our White Paper highlighted how fostering a sustainability culture in European SMEs requires the creation of a favorable “ecosystem” comprising both public and private entities. Today, our Group is even more determined to play its part in the creation of such an environment.

It is our belief that this research report will encourage new partners from all sectors to join our cause, and that more small- and medium-sized enterprises will openly embrace sustainability at large.

Once again, my gratitude and that of all colleagues at Generali goes to the researchers and the whole team at the SDA Bocconi Sustainability Lab for their commitment and relentless work.

FOREWORD

Bocconi University Rector - Gianmario Verona

We are experiencing a period of extraordinary opportunities, but also of turbulence and tensions, both well captured by the analysis contained in the second edition of the Generali SME EnterPRIZE White Paper.

If it is in fact true that the sustainable transition of SMEs is in progress, at least to a certain extent, then a growing number of European SMEs are formally or informally committed to integrating environmental and social matters into their strategies or operations. These companies need to be supported to complete and fulfil their journey, and undecided and laggard SMEs must be convinced to embrace the transition.

Specific evidence emerged from the analysis describing a link that has been known to sustainability scholars for years, but which appears even more significant when confirmed by the actual experience of SMEs. Companies that have adopted a formalized approach to sustainability, with planning and implementation of initiatives in the field of environmental stewardship – including investments in clean and renewable energies, energy efficiency projects, and saving, reuse or recycling of materials – declare that they have obtained benefits not only in terms of reputation, corporate image or in their relations with stakeholders, but also competitive and economic advantages.

In other words, SMEs that invested early in sustainability are now better equipped than others in facing the complexities we are experiencing, seizing new competitive and market opportunities, and managing their risks effectively.

Now, more than ever, all the relevant stakeholders – policy makers and institutions, large companies, finance, academia and research – need to continue their efforts while strengthening their commitment to support the change of perspective already embraced by many European SMEs.

We must all think in terms of sustainable transition by promoting actions that have a positive impact on the environment, society, and people while generating sustainable economic value.

Objectives of the second edition of the Generali SME EnterPRIZE White Paper

In 2021, SDA Bocconi Sustainability Lab developed the first SME EnterPRIZE White Paper entitled “Fostering Sustainability in Small and Medium-sized Enterprises”, with the support of partner universities and researchers. According to our analysis, fostering sustainability in SMEs requires the creation of an “ecosystem” of public and private actors. Policy makers, large companies, finance, academia and research are all, in fact, called upon to create a favourable environment to support SMEs in their just sustainability transition, i.e. a transition compatible with the capacities and resources of SMEs.

The second edition of the White Paper, building on these premises, aims to make European SMEs even more central to our analysis, through their direct involvement via a sample survey that further investigates the evolution over time of SMEs’ strategic approach to sustainability. This is paramount considering **the economic and global scenario** characterised by significant complex factors, including recovery from the Covid-19 pandemic, the need to accelerate ecological and digital transitions, and the tensions in international markets (e.g. energy, transportation, raw materials) exacerbated by the geopolitical implications of the Russian invasion of Ukraine.

The first chapter contains an updated review of the scientific and non-scientific literature published since the previous edition of the White Paper on sustainability and SMEs in the countries of interest (i.e. Austria, Czech Republic, France, Germany, Hungary, Italy, and Spain). Most importantly, it presents the results of a **specifically designed survey of a sample of 1,000 small and medium sized businesses**. The objective of the survey is to highlight not only SMEs’ strategic approach to sustainability in the current context, but also to grasp the level of integration of sustainability within companies’ operations, including the main drivers for the adoption of a sustainability approach, the obstacles faced by SMEs, as well as the activities undertaken, and the actual, perceived, or envisaged benefits.

The second chapter analyses the action of governments, and in particular the National Recovery and Resilience Plans (NRRPs) adopted by the selected European countries for recovery in the wake of the Covid-19 pandemic. The aim is not only to analyse the overall measures dedicated to ecological and digital transition, but above all to understand whether the NRRPs contain provisions that support and reward sustainable SMEs in their just sustainability transition.

The third chapter analyses another enabling factor aimed at fostering the just sustainability transition for SMEs, namely the availability of sustainable finance instruments and initiatives targeted at small and medium-sized enterprises. In particular, we investigate whether financial operators (i.e. banks and insurance operators) are on track to provide tailored and effective sustainable finance tools (e.g. green, social, sustainable, and sustainability-linked bonds or loans) to support sustainable European SMEs.

The fourth chapter, finally, focuses the analysis on the transformative dynamics of selected economic sectors belonging to two industrial ecosystems, namely **energy-intensive industries (EII) and agri-food**. The energy-intensive industries and agri-food sectors register the highest European levels of GHG emissions, accounting for a combined 41% of total EU GHG. The transition of these ecosystems to climate neutrality is paramount for the success of EU carbon targets, and they will thus face significant transformations in the near future, such as, for example, accelerating investment in research and innovation, and rollout of breakthrough technologies to decarbonise operations, or access to large amounts of decarbonised energy. We sought to analyse whether SMEs operating in these ecosystems are aware of the imminent transformations and are ready to embrace such evolution.





CHAPTER 1

What approach do European SMEs take to sustainability and how has it evolved over the past two years?

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1. The past two years have accelerated trends already in place, but also brought new issues and a polarisation of European SMEs' approach to the sustainability transition

The first edition of the White Paper conducted an in-depth analysis of over 3,000 national and international papers and reports from academic publications and grey literature, aimed at describing the strategic approach of European SMEs towards sustainability. The resulting picture highlighted that small and medium-sized companies are still adopting a non-formalised approach, as they rarely use the language of corporate sustainability to describe their activities.

The publications analysed illustrated that, aside from most SMEs still being unable to immediately or spontaneously associate their actions with a specific sustainability strategy, they do more than they are aware of, and/or are capable of communicating. Three specific domains of intervention emerged, with employee welfare being the most relevant, followed by initiatives related to the environment, and community engagement.

Our analysis shows a growing polarisation. On the one hand, a shift towards sustainability: in the last 2 years, the number of SMEs adopting an ESG approach almost doubled. But, the number of SMEs that declare not to be interested in any ESG strategy or plan also more than doubled.

Our most recent survey, conducted in May 2022 by SDA Bocconi School of Management Sustainability Lab for Generali SME EnterPRIZE on a sample of 1,000 SMEs in selected countries of interest, shows an acceleration and polarisation of trends in several respects.

Comparing the most recent results with a previous pan-European survey conducted by the European Commission in 2020¹, we can highlight significant growth in the number of SMEs that have adopted a sustainability strategy or plan, rising from 14% in 2020 to 26% in 2022, with the greatest increases found in Italy (from 6% to 31%), Spain (from 10% to 30%) and Germany (from 14% to 39%).

Over the same period, the number of SMEs that have started the process of implementing a sustainability strategy/plan, but haven't yet finalised the process, has decreased (from 20% to 15%, and from 38% to 13% respectively), whereas the number of SMEs stating that they do not have any plans to adopt a sustainability strategy/plan in the near future more than doubled (from 20% to 43%).

According to these figures, the past two years have had contrasting effects. On the one hand, they have prompted several SMEs to complete the journey

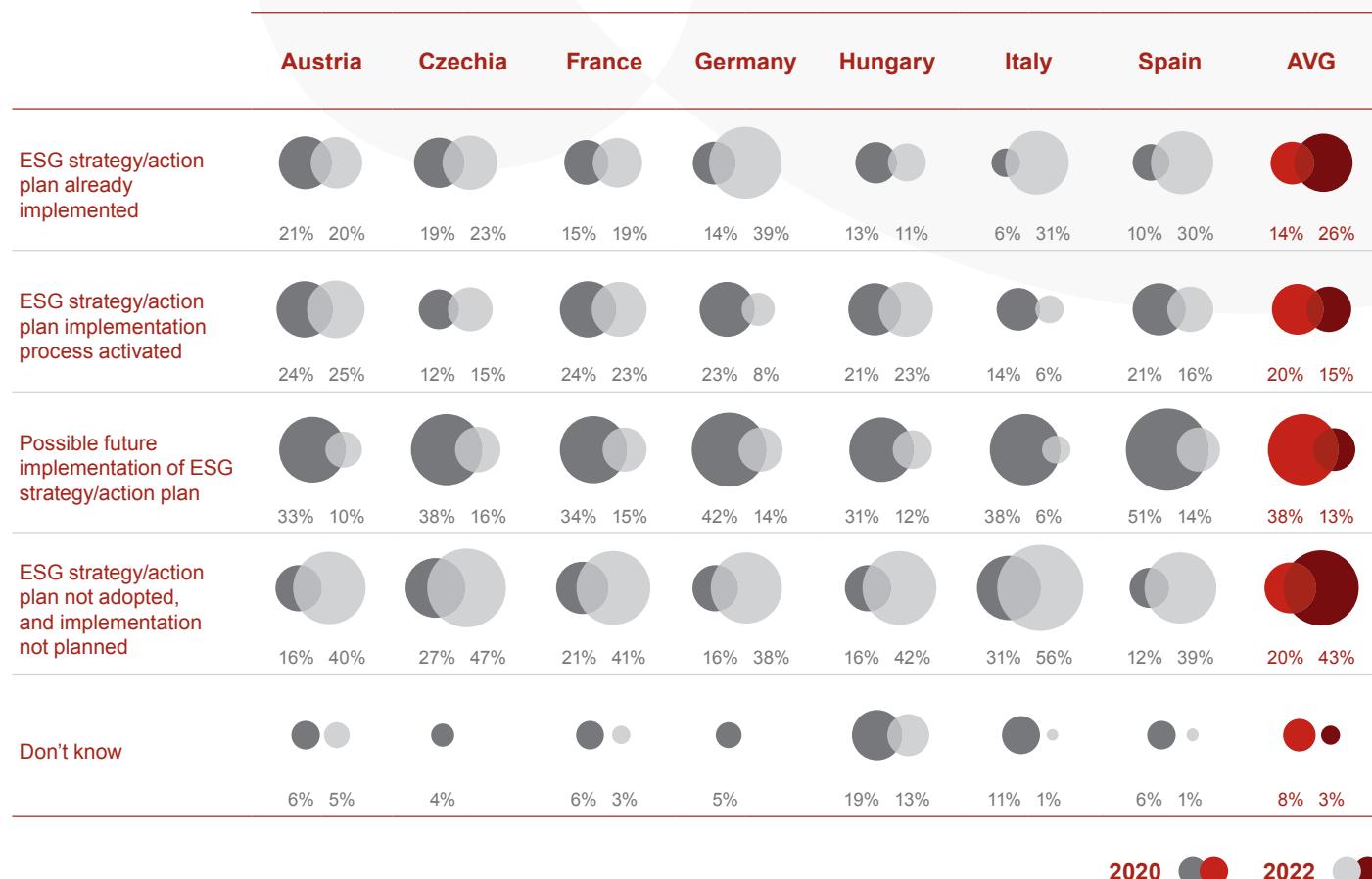
1. European Commission (2020), SMEs, start-ups, scale-ups and entrepreneurship Flash Eurobarometer 486 https://data.europa.eu/euodp/en/data/dataset/S2244_486_ENG

they had already undertaken, or convinced a number of undecided companies to take action. On the other hand, post-pandemic uncertainty and international tensions have encouraged other SMEs to concentrate on the day-to-day, without planning further initiatives relating to the sustainability transition.

This has led to a polarisation. We can identify SMEs with a formalised sustainability strategy/plan (we can call them “Heroes”) and “Soon-to-be” companies, which have started their transition journey, bringing the total number of “sustainable” or “soon-to-be” companies to 41%.

On the other hand, 43% of SMEs seem to be currently “unwilling” to commit on these issues (“Laggards”), as they are not considering the adoption of any formal strategy in the field of corporate sustainability. Somewhere in the middle lie companies that are “Undecided” and need to be supported in their decision-making in order to bring them on board in the sustainability journey.

Strategic approach to sustainability - 2020 (EU Eurobarometer) vs 2022 SDA Bocconi survey for Generali SME EnterPRIZE



Total N. 1,000

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022), European Commission SMEs, start-ups, scale-ups and entrepreneurship Flash Eurobarometer 486 (2020)

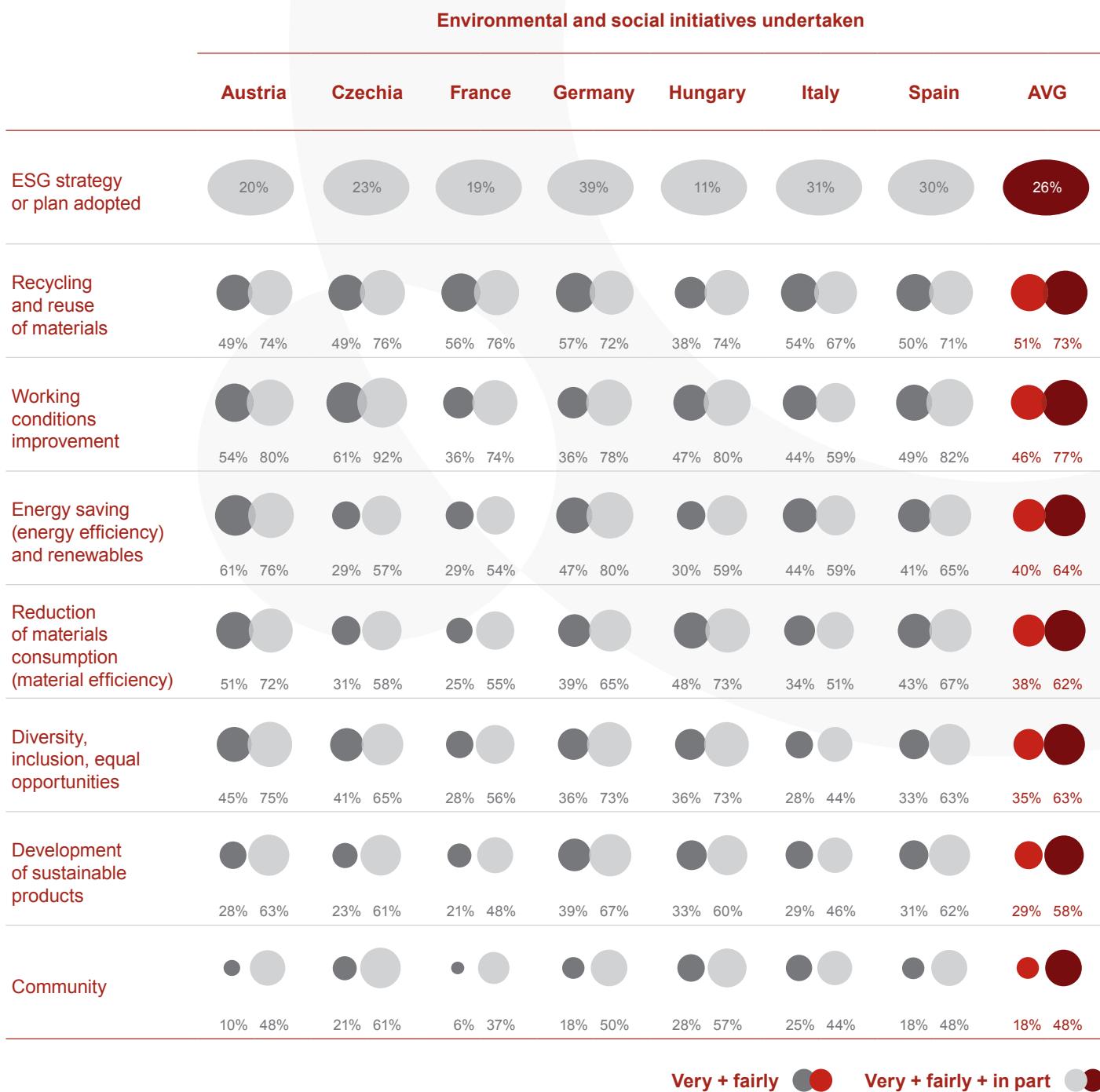
At the country level, Italy, Spain, and Germany recorded the highest growth rates, recouping a previously accumulated lag, with regard to Italy and Spain in particular, and bringing these three countries to the top of the league with respect to the other countries analysed.

In the other nations, the adoption of formalised sustainability strategies and/or plans appears more limited. SMEs from Austria, Czech Republic, France and Hungary, show a slightly slower adoption, as more companies are still in the process of adopting a formalised ESG approach, suggesting that the first “wave” of transition is not yet complete. Experts and observers from different countries (e.g. Austria) suggest that this delay might also be related to concerns on the part of SMEs at taking on the imposing challenge of the sustainability transformation. This fear transforms into inertia, as the businesses themselves are aware that they lack the required competencies, knowledge and resources.



2. Our analysis confirms that European SMEs' approach to sustainability is informal, with margins for growth, and that SMEs do more than they are aware of doing and/or are capable of communicating, with environmental and social responsibility equally relevant in terms of the initiatives undertaken

Our analysis confirms that although only 26% of the SMEs interviewed have adopted a formalised approach to sustainability, they are involved in several specific initiatives that are informal and not coordinated within a specific strategy.



Total N. 1,000

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022)

The “sunk sustainability” phenomenon is confirmed: SMEs do more than they are aware of. Efforts are mainly devoted to the environment, employees, and community.

SMEs do more than they are aware of doing. Efforts are mainly devoted to the environment, employees, and community. However, the uncertainties of the last two years have put some SMEs' investments and initiatives on hold

As regards environmental initiatives, on average 71% of SMEs from the countries analysed have adopted projects related to recycling and reuse of materials (circularity), 64% have put in place energy efficiency projects, 62% material efficiency, and 58% have developed more sustainable products or services. This evidence is consistent with the analysis of the most recent literature and reports². At the individual country level, more than 7 out of 10 SMEs invested in recycling and reuse of materials in France (76%), Czech Republic (76%), Austria (74%), Hungary (74%) and Germany (72%). Energy efficiency is addressed in particular in Germany (80%) and Austria (76%), material efficiency initiatives are focused on in Hungary (73%), Austria (72%), and Spain (67%).

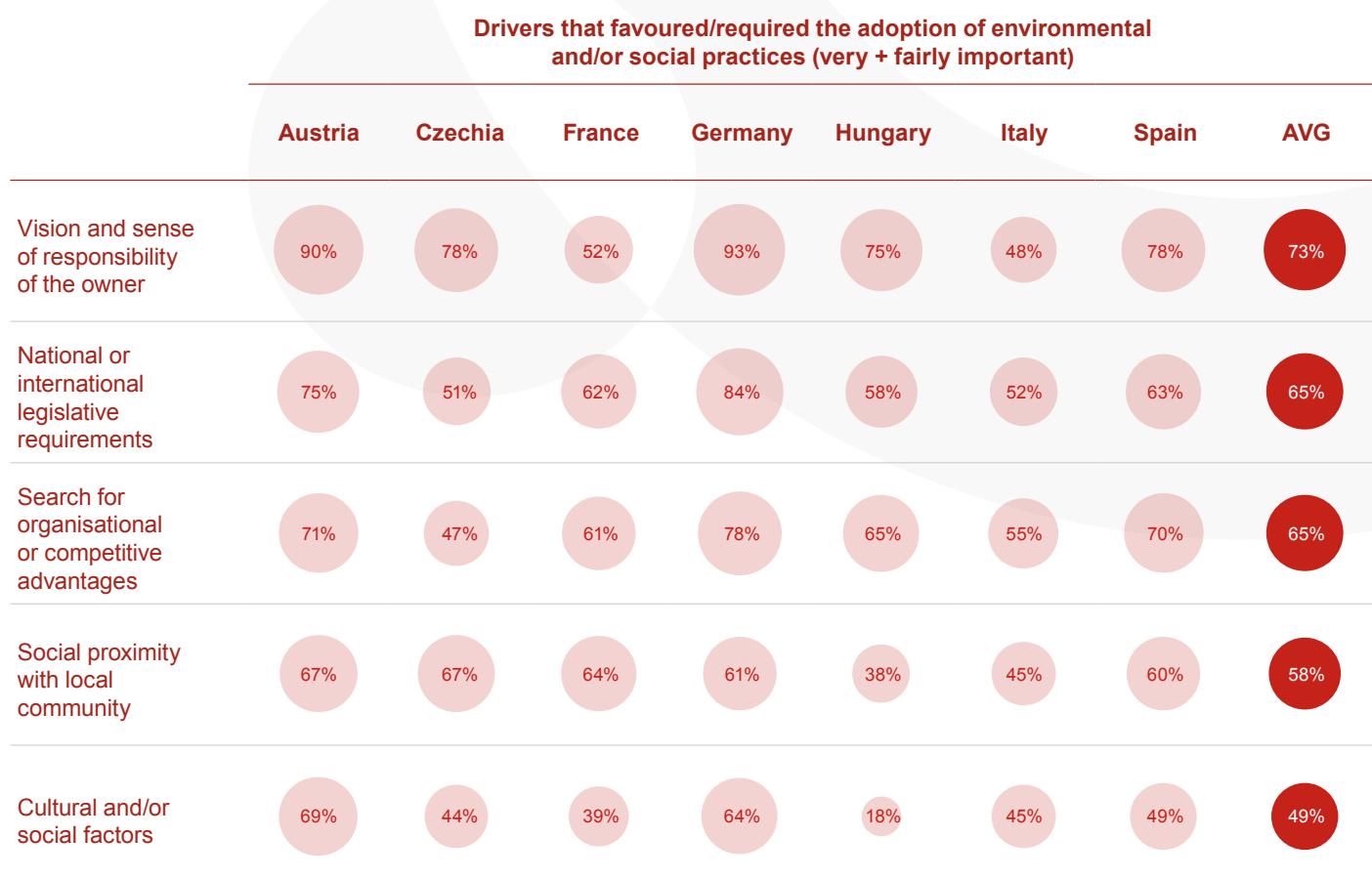
From a social point of view, 77% of the SMEs interviewed have implemented initiatives to improve the working conditions of employees, with Czech Republic (92%), Spain (82%), Austria (80%), Hungary (80%) and Germany (78%) leading the pack. In addition, 63% of SMEs adopted initiatives aimed at promoting diversity, inclusion, equal opportunities, with Austria (75%), Germany (73%) and Hungary (73%) being the most active in this field.

In terms of involvement in (and of) local communities, our survey shows that on average 48% of the SMEs interviewed have implemented initiatives in favour of culture, education, youth, sport and vulnerable groups in their local communities. The lower percentage of adoption, compared to the other categories, can be explained in part by the fact that such initiatives are seldom communicated externally by SMEs, and to some extents they are “embedded” in the informal way SMEs operate within their communities.

3. Individual motivations and a sense of responsibility on the part of the owner are the main drivers for the adoption of environmental and/or social practices, followed by national or international legislative requirements and the search for organisational or competitive advantages

2. European Commission (2022), Flash Eurobarometer 498 SMEs, green markets and resource efficiency <https://europa.eu/eurobarometer/surveys/detail/2287>

An average of more than 7 out of 10 SMEs state that the drivers that favoured or required the adoption of an ESG approach are to be found in the ethical motivations of their owners, with particularly high peaks in Germany, Austria, Spain, Czech Republic and Hungary. The equally relevant second- and third-ranked reasons refer to national or international regulations and the search for an organisational or competitive advantage, with the former assessed as very or fairly important in Germany and Austria, and the latter more evenly distributed across the different countries, with Germany and Austria leading the pack.



Total N. 411

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022)

4. Several barriers prevent SMEs from developing a structured and integrated approach to sustainability: these barriers are related to institutional, organisational, and individual factors

Institutional, organisational and individual barriers prevent SMEs from adopting sustainability strategies.

Our survey provided additional insights into several major factors, both external and internal to companies, capable of hindering SMEs in developing sound sustainability strategies:

- **Lack of institutional support, including excessive (national and/or international) regulations and bureaucracy:** on average, 63% of the SMEs state that the main obstacle in adopting a structured and integrated approach to sustainability is due to the lack of institutional support, including excessive national and/or international regulations and bureaucracy. Czech Republic ranks first with 78%, followed by Austria (70%) and Germany (68%). This is in line with the literature and empirical evidence, which highlight the lack of governmental support and clear legislation, the lack of uniformity in regulatory frameworks and norms, administrative complexity and the relative excessive costs (real or perceived), as being among the main barriers preventing SMEs from embracing sustainability strategies
- **Lack of clear, simplified frameworks specifically designed for SMEs:** almost 6 SMEs out of 10 declare that the second most relevant barrier for the implementation of sound sustainability strategies is related to the lack of clear, simplified frameworks specifically designed for the needs, capabilities and resources of SMEs. Existing tools, standards, models, frameworks, in the ESG management or reporting domains, although applicable to SMEs with adaptations, have historically been designed for large enterprises, including several of the most widespread initiatives at international level (e.g. GRI, <IR>, World Economic Forum Stakeholder Capitalism Reporting Metrics)
- **Lack of sustainable finance instruments specifically dedicated and targeted to SMEs:** access to finance is essential for SMEs to support the investments needed for the sustainability transition. 58% of the SMEs interviewed lamented the lack of sustainable finance instruments specifically dedicated to the needs, capabilities and resources of SMEs

- **Lack of economic and financial resources:** linked to the previous barrier, 57% of the interviewed SMEs complained of a lack of economic and financial resources to dedicate to investments for the sustainability transition, not financeable through instruments at favourable conditions for SMEs
- **Lack of public incentives:** 54% of those interviewed criticised the lack of public incentives (e.g. economic and/or organisational support, as well as favourable conditions rewarding sustainable SMEs for example in public tenders) to promote and sustain the sustainability transition
- **Lack of internal resources, including personnel and skills:** lack of internal competencies is classed as very important or important for 54% of the SMEs interviewed. The inherent complexity of many aspects relating to sustainability, including elements of a technical and technological, specialist, and administrative nature, in a range of multi-disciplinary domains (i.e. environment, social, governance), combined with the substantial lack of resource specialisation within many SMEs, represents a critical factor for many smaller firms
- **Lack of market recognition:** 44% identified a lack of market recognition as a barrier in the adoption of an ESG approach. Therefore, initiatives aimed at further stimulating the demand for sustainable products and services are needed, both in the Business-to-Business and Business-to-Consumer markets



Obstacles to adoption of an ESG approach (very much + very important)

	Austria	Czechia	France	Germany	Hungary	Italy	Spain	AVG
Lack of institutional support (regulation, bureaucracy)	70%	78%	51%	68%	60%	54%	64%	63%
Lack of clear and simplified frameworks designed for SMEs	67%	58%	62%	60%	68%	39%	56%	58%
Lack of sustainable finance for SMEs	70%	65%	53%	54%	72%	40%	59%	58%
Lack of economic or financial resources	64%	63%	53%	47%	68%	48%	59%	57%
Lack of public incentives	68%	48%	58%	51%	59%	37%	61%	54%
Lack of internal resources (incl. personnel, skills)	57%	50%	52%	53%	71%	44%	53%	54%
Lack of market recognition	53%	48%	34%	41%	58%	31%	52%	44%

Total N. 1,000

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022)

5. The ESG “business case” is clear. SMEs that develop an ESG approach enjoy significant benefits: better environmental impact; better employee and customer satisfaction; better reputation and dialogue with stakeholders; better efficiency, market share, access to new markets, and competitive advantage

The survey confirms the existence of a **positive link** between sustainability-oriented social and environmental commitment and a wide range of corporate performance benefits. On average, almost 8 out of 10 companies that developed a sustainability strategy/plan improved their environmental performance and their employee satisfaction levels, while more than 7 out of 10 saw improved customer satisfaction levels.

This is followed by equally significant results for owner satisfaction (69%), community relations (67%), reputation (66%), and management satisfaction (65%). Regarding economic and competitive performance, 64% of respondents claim to have increased operational efficiency, 60% to have gained market share or obtained access to new markets (54%) and developed/acquired/consolidated their competitive advantage (50%). Access to better insurance conditions (47% of respondents), and better credit conditions (43%) were also interesting results.

SMEs that adopt an ESG approach enjoy benefits in all fields, especially in terms of environmental impact, employee and customer satisfaction, reputation and dialogue with stakeholders, efficiency, market share and access to new markets.

Benefits from adopting a ESG approach (very positive + positive)

	AVG	Austria	Czechia	France	Germany	Hungary	Italy	Spain
Better environmental impact	78%	85%	89%	90%	75%	69%	64%	83%
Employees' satisfaction	77%	85%	89%	83%	86%	38%	60%	79%
Customers' satisfaction	71%	81%	74%	90%	70%	38%	54%	77%
Owners' satisfaction	69%	85%	74%	63%	73%	54%	50%	77%
Better relations with community	67%	74%	74%	77%	71%	46%	56%	63%
Reputation and dialogue with stakeholders	66%	81%	89%	57%	73%	23%	56%	63%
Management satisfaction	65%	67%	85%	77%	63%	31%	54%	69%
Better efficiency and productivity	64%	78%	78%	47%	60%	46%	64%	69%
Market share increase	60%	67%	67%	90%	60%	23%	54%	50%
Better risk management	56%	70%	67%	37%	68%	38%	52%	46%
Access to new markets	54%	63%	59%	33%	59%	23%	68%	46%
Competitive advantage	50%	70%	59%	30%	57%	38%	52%	38%
Better insurance conditions	47%	56%	52%	37%	51%	23%	48%	44%
Better credit conditions	43%	63%	41%	33%	46%	23%	54%	29%

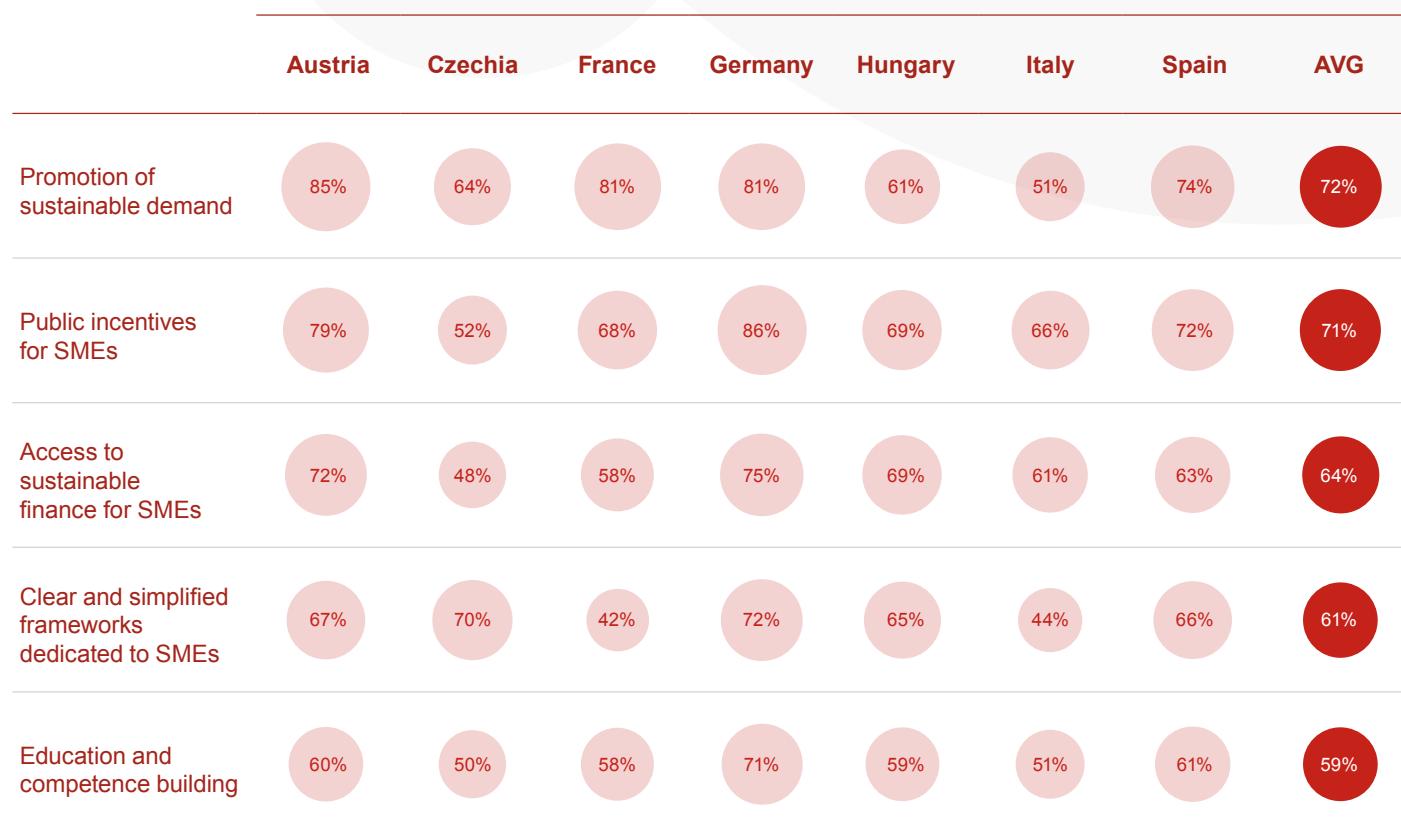
Total N. 258

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022)

6. SMEs ask that the sustainability transition be facilitated by promoting sustainable demand, providing public incentives, favouring access to sustainable finance, and designing clear and simplified frameworks targeted to SMEs' needs, resources and capabilities

The SMEs interviewed clearly demand that the sustainability transition be supported by public and private initiatives, both economic and non-economic.

Importance of factors for the sustainable transition of SMEs (very much + very important)



Total N. 545

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022)

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In particular:

SMEs ask that the sustainable transition be facilitated with supporting economic and non-economic initiatives.

- **Promotion of sustainable demand:** on average 72% of respondents, with peaks of 85% in Austria and 81% in Germany and France, state that the sustainability transition should be accompanied by initiatives to promote sustainable demand. These initiatives may be of various kinds, not necessarily economic (for example, linked to the promotion of awareness of sustainability issues), and may be implemented by public (governments, supranational institutions) or private actors (e.g. associations, groups or alliances of companies)
- **Public incentives for SMEs:** more than 7 out of 10 companies want public incentives for sustainable SMEs, with particular interest in Germany (86%), Austria (79%) and Spain (72%). These incentives may be economic (e.g. subsidised financing, guaranteed by the government, for the sustainability transition) or non-economic (e.g. incentives or simplifications, including in public tenders, for companies that have adopted a sustainability strategy)
- **Access to sustainable finance for SMEs:** as already highlighted, SMEs demand access to dedicated financial instruments to fund investment in the sustainability transition. This was indicated by more than 6 out of 10 companies, with the highest numbers in Germany, Czech Republic, Austria and Spain.
- **Clear and simplified frameworks for SMEs:** 61% of SMEs also asked for clear and simplified frameworks adapted to the characteristics, resources and competencies of SMEs. SMEs are part of national and international value chains, within which larger companies are seeking greater involvement on environmental and social issues, often requiring the extension to SMEs of frameworks (e.g. reporting models, management models, questionnaires) not designed with the characteristics of SMEs in mind
- **Education and competence building:** 59% of SMEs asked for education and competence building, recognising the complexity of the challenges and the need for support in terms of the knowledge required to manage the sustainability transition

7. Based on our analysis, several key trends emerged

- The polarisation observed seems to be linked to the changed scenario of the last two years. This is the result of the long lasting Covid-19 pandemic, and the tensions that have emerged in commodity markets (e.g. rising costs of transportation, energy and raw materials), and are being amplified by current geopolitical tensions.** These elements add to the traditional barriers faced by SMEs, increasing the level of uncertainty for small and medium-sized businesses and making it difficult to plan initiatives and investments, often perceived as being over and above “business-as-usual”. Although the Covid-19 pandemic focused SMEs’ attention on sustainability, it also increased the uncertainties inherent in the recovery, so that concrete initiatives (e.g. further investments) have not yet been implemented by all SMEs, even those potentially more sensitive to these issues
- Specific issues of ecological transition and climate action are affected by the current tensions on raw material and energy markets and the cost of transportation.** Initiatives aimed at increasing the efficiency of company processes, including in the use of materials, appear at the top of the list of priorities of SMEs, along with initiatives aimed at promoting the use of recycled and more circular materials, preferably sourced from closer geographic markets. Similarly, tensions on the international energy markets are pushing SMEs to pay greater attention to energy saving. The high volatility and uncertainty of energy prices are driving companies, including SMEs, to implement energy efficiency as a means to recover at least part of costs
- The ESG business case can help convince the “undecided” and “laggards” to embrace the sustainability transition.** SMEs that have adopted an ESG approach have been able to enjoy benefits in all fields, not only in terms of better environmental impact, employee and customer satisfaction, reputation and dialogue with stakeholders, but also in terms of increased efficiency, growth of market share, access to new markets, and competitive advantage. These achievements must be leveraged to convince the “undecided” or “laggard” SMEs that still have not embraced the sustainability transition, illustrating the benefits and opportunities – and the risks of being unsustainable and of a failed transition – while putting initiatives in place to overcome the hurdles they see on their path

New relevant criticalities (e.g. tensions in commodity markets, growing energy and transportation costs) are adding to the traditional barriers preventing the sustainability transition of SMEs.

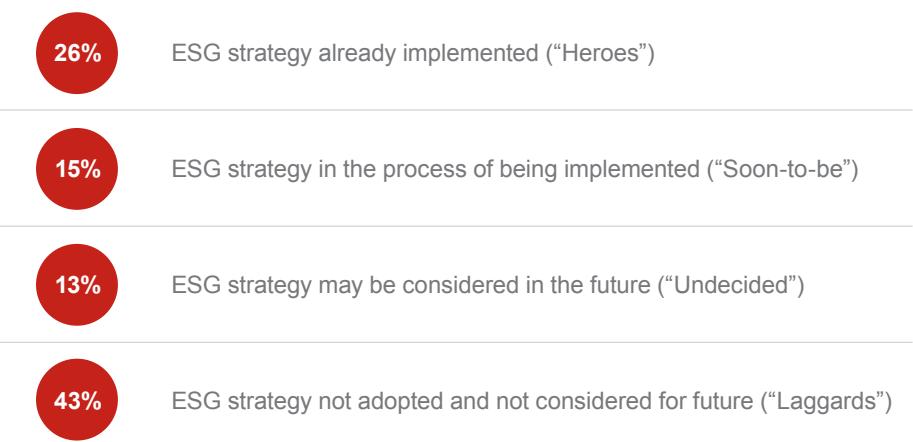
The positive ESG business case provides unprecedented opportunities to involve and convince “laggards” to embrace the sustainability transition.

Barriers, SMEs' strategic approach to sustainability, and how SMEs ask to be supported

What are for SMEs the barriers to sustainable transition

Lack of institutional support (regulation, bureaucracy)	63%
Lack of clear and simplified frameworks designed for SMEs	58%
Lack of sustainable finance for SMEs	58%
Lack of economic or financial resources	57%
Lack of public incentives	54%
Lack of internal resources (incl. personnel, skills)	54%
Lack of market recognition	44%

What is SME's strategic approach to sustainability



How SMEs ask to be supported

Promotion of sustainable demand	72%
Public incentives for SMEs	71%
Access to sustainable finance for SMEs	64%
Clear and simplified frameworks for SMEs	61%
Education and competence building	59%



CHAPTER 2

Do National Recovery and Resilience Plans (NRRPs) contain provisions to support and reward SMEs in their just sustainability transition?

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1. NRRPs are intended to provide unprecedented opportunities for the green and digital transitions of the European economy, including SMEs

Next Generation EU (NGEU) is the temporary recovery tool designed to help Europe emerge from the coronavirus crisis. It is worth €806.9 billion, and, combined with the Multiannual Financial Framework (MFF) 2021-2027, the financial incentives package reaches a total of €2 trillion. It represents the largest incentive package ever funded in Europe and it will help rebuild a post-Covid-19 Europe, with the goal of making Europe greener, more digital and more resilient.

Table: MMF and NGEU expenditure categories (€ billion),
European Commission (2021), adapted from <https://ec.europa.eu>

MMF + NGEU Expenditure categories	MMF	NGEU	TOTAL
1. Single Market, Innovation and Digital	149.5	11.5	161.0
2. Cohesion, Resilience and Values	426.7	776.5	1,203.2
3. Natural Resources and Environment	401.0	18.9	419.9
4. Migration and Border Management	25.7		25.7
5. Security and Defence	14.9		14.9
6. Neighbourhood and the World	110.6		110.6
7. European Public Administration	82.5		82.5
TOTAL	1,210.9	806.9	2,017.8
TOTAL expressed in 2018 prices	1,074.3	750.0	1,824.3

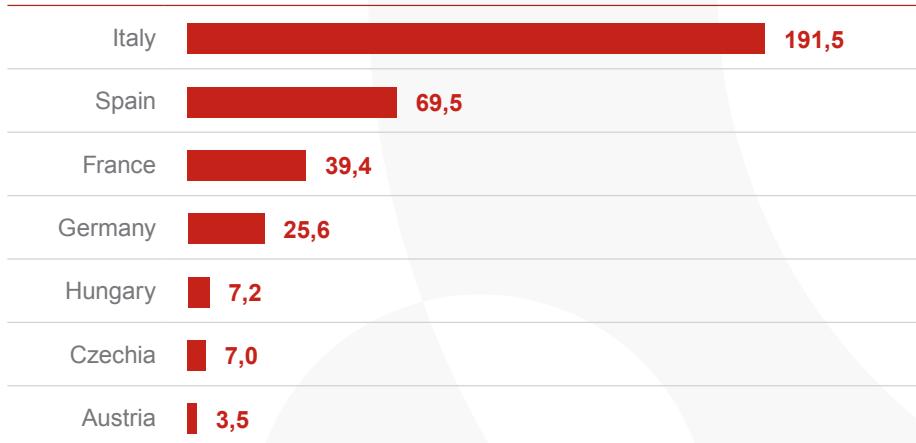
Sources:

https://ec.europa.eu/info/strategy/eu-budget/long-term-eu-budget/2021-2027/spending/headings_enhttps://data.consilium.europa.eu/doc/document/PE-75-2020-INIT/en/pdfhttps://ec.europa.eu/commission/presscorner/detail/en/QANDA_20_2465

Taking a closer look at the NGEU recovery instrument, €723.8 out of the total €806.9 billion are allocated to its centrepiece, the Recovery and Resilience Facility (RRF), which consists of loans and grants to support reforms and investments by EU countries. These funds are allocated to the different countries based on several criteria. Among the seven Member States analysed, as shown below, more than 26% of the resources are addressed to Italy.



Recovery and Resilience Facility by analysed Member States (billion €)



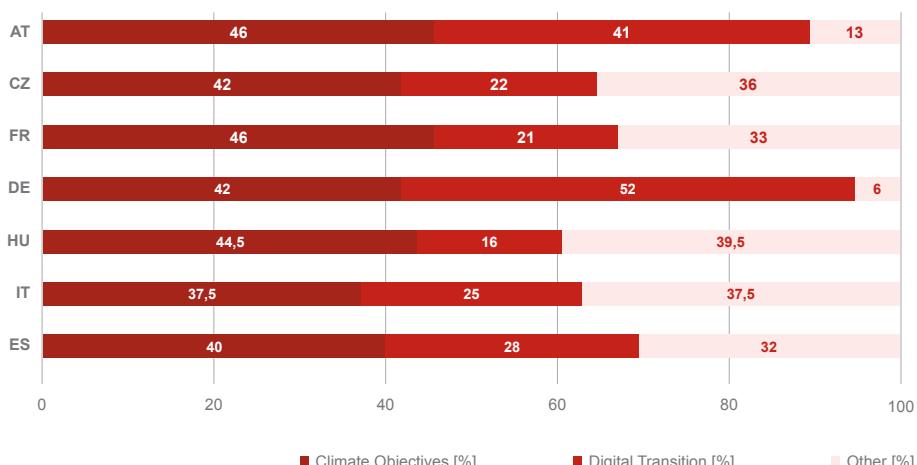
Source:

Authors' elaboration on NRRPs data

European Member States were required to draw up their own National Recovery and Resilience Plans (NRRPs) aimed at addressing country-specific challenges and helping the EU achieve its targets of climate neutrality by 2030 and 2050 (i.e. Fit for 55 and Net zero), as well as setting Europe on a path of digital transition, creating jobs, and spurring growth in the process. **Specific minimum thresholds for climate and digital expenditure were set at 37% and 20% respectively.**

The seven analysed Member States allocated an average of 45% of spending to climate measures and an average of 29% to the digital transition. This exceeds the agreed targets.

Spending allocated to climate measures and digital transition by analysed Member States



Source:

Authors' elaboration on NRRPs data

The following table describes the main key measures that each country is planning to adopt to achieve the green and digital transition goals.

Key measures for green and digital transitions

Countries	Green transition	Digitalisation
Austria	<ul style="list-style-type: none"> Sustainable mobility with zero-emission transport (€ 843 million) Electrified trans-European rail network expansion (€ 543 million) Low-emission buildings and vehicles (€ 504 million) Recycling of beverage containers (€ 300 million) Phase-out of oil and gas heating in private homes (€ 159 million) Biodiversity fund (€ 50 million) 	<ul style="list-style-type: none"> Gigabit networks (€ 891 million) PC for secondary pupils (€ 172 million) Digital, service-oriented public administration (€ 160 million) SMEs and larger companies' digitalization (€ 101 million)
Czechia	<ul style="list-style-type: none"> Energy efficiency (residential and public buildings) (€1.4 billion) Sustainable mobility (€ 1.1 billion) Renewable energy (businesses and household) (€ 480 million) Circularity (€ 141 million) 	<ul style="list-style-type: none"> Digital training and equipment for schools (€ 585 million) Digital transformation and cyber-security of PA (€ 585 million) Digital transformation of businesses (€ 650 million)
France	<ul style="list-style-type: none"> Building renovation (€ 5.8 billion) Sustainable transport (€ 4.4 billion) Green technologies (€ 1.9 billion) Decarbonization of industrial processes (€ 0.3 billion) 	<ul style="list-style-type: none"> Key digital technologies (i.e., cybersecurity, cloud) (€ 1.8 billion) Support to businesses (€ 385 million) High speed broadband (€ 240 million) Primary and secondary schools' digitalization (€131 million)
Germany	<ul style="list-style-type: none"> Making the transport sector greener (€ 5.4 billion) Decarbonization (€ 3.3 billion) Energy efficiency of residential buildings (€ 2.5 billion) Renewable hydrogen (€ 1.5 billion) 	<ul style="list-style-type: none"> Public services digitally available (€ 3 billion) Microelectronics and communication technologies (€ 1.5 billion) Cloud infrastructures and services (€ 750 million) First national online education platform (€ 630 million) Interconnect registers (€ 275 million)
Hungary*	<ul style="list-style-type: none"> Sustainable green transport (€ 1.7 billion) Green energy transition (€ 700 million) Transition to a circular economy (€ 275 million) Water management (€ 118 million) 	<ul style="list-style-type: none"> Electronic public procurement Support data-based decision making and legislative processes Automatic public administration decision support system Reinforcement of IT asset management system to improve the efficiency of public services
Italy	<ul style="list-style-type: none"> Sustainable mobility (€ 34 billion) Energy efficiency (residential/public buildings) (€ 15.3 billion) Renewable energies, circular economy, waste and water management (€ 11.2 billion) 	<ul style="list-style-type: none"> Digital transition and innovation (€ 13.4 billion) Connectivity (€ 6.7 billion) Digitalization of the Italian PA (€ 6.1 billion)
Spain	<ul style="list-style-type: none"> Sustainable urban and long-distance mobility (€ 13.2 billion) Energy efficiency of public and private buildings (€ 7.8 billion) Decarbonization of the energy sector (€ 6.1 billion) 	<ul style="list-style-type: none"> Digitalization of SMEs in manufacturing industry, tourism and culture systems (€ 4.6 billion) Digital skills training (€ 3.6 billion) Digital transformation of the public administration (€ 3.2 billion)

Source:

Authors' elaboration on NRRPs data

* Hungary's NRRP not yet approved by the EU

2. Although it is too early to express final judgments, as NRRPs are still in the early stages of implementation, they reveal a variety of initiatives to provide SMEs with support and meet their expectations in certain areas

Based on the analysis of NRRPs, and on interviews with informed experts in the different countries, **three major types of initiatives emerge that can meet SMEs expectations** (e.g. promotion of sustainable demand, public incentives for SMEs), although these are not necessarily focused on this type of firm:

- **Infrastructural strategic initiatives**, aimed at improving national strategic infrastructures, including clean mobility and transportation facilities (e.g. zero-emission transport, electrified intermodal rail networks), the availability of cleaner sources of energy (e.g. renewables, hydrogen), also aimed at contributing to the decarbonisation of specific energy-intensive sectors, as well as the implementation of advanced digital networks. Such investments are planned in Austria (sustainable mobility with zero-emission transport and electrified trans-European rail network expansion), Czech Republic (sustainable mobility), France (sustainable transport), Germany (making the transport sector greener), Hungary (sustainable green transport), Italy (sustainable mobility), and Spain (sustainable urban and long-distance mobility). European SMEs can **indirectly benefit** from such interventions to improve their environmental and social profiles, leveraging cleaner forms of production or greening their internal and external operations, including along their value chains. As regards the digitalisation measures, these also represent an enabler to amplify the effects of the ecological transition
- **Contextual sectoral initiatives**, aimed at directing resources to the modernisation of essential areas of the public and private sectors, such as the improvement of energy efficiency of public and private buildings. European SMEs, in particular those operating in the construction sector and in the supply of materials and technologies for energy-saving and efficiency (e.g. insulation materials, energy-saving appliances), **can benefit from these measures** aimed at supporting public and private demand for environmentally related products and services. Massive investments in this field are planned in Austria (low-emission buildings and vehicles, phase-out of oil and gas heating in private homes), Czech Republic (energy efficiency for residential and public buildings), France (building renovation), Germany (energy efficiency of residential buildings), Italy (energy efficiency for residential/public buildings), and Spain (energy efficiency of public and private buildings)

- **Initiatives directly addressed to enterprises, and in particular to SMEs**, through the financing or co-financing of measures aimed at promoting investments in the field of the green transition, e.g. reduction in greenhouse gas (GHG) emissions, energy efficiency and pilot projects, support for environmentally friendly production processes or services, support for circular and regenerative materials, contribution to green skills and jobs

NRRPs can contain positive and/or negative technical environmental as well as social criteria which subordinate or favour access for companies, including SMEs, to financial resources and grant opportunities

The Italian Law Decree 77/2021, known as the Simplification Decree of 31 May, 2021, officially called “Governance of the National Recovery and Resilience Plan and first measures to strengthen administrative structures and accelerate and streamline procedures”, in art. 47, namely “Equal opportunities, generational and gender in public NRRP contracts”, **contains provisions relating to equal opportunities, promotion of youth and female employment, company welfare, and reporting of a non-financial nature.**

In the implementation of the Italian NRRP, in fact, the Italian Government introduced **negative as well as positive criteria** specifically aimed at:

- Making participation in tenders subject to the possession of certain ESG requirements (**negative criteria**)
- Assigning additional points to companies in possession of specific requirements of an ESG nature (**positive criteria**)

According to the provisions, in fact, **companies with more than 15 employees** (thus including SMEs) participating in tenders for the

implementation of the Italian NRRP:

- **Must present a report on personnel with reference to the inclusion of women** in business activities and processes. In the event of a breach of the obligation, penalties will be applied, such as ineligibility to participate in further procedures for 12 months
- **Can be awarded additional points** where they adopt specific work-life balance initiatives, or commit to hiring women and young people under the age of 35, or if they have applied principles of gender equality and adopted measures to promote equal opportunities for young people and women with regard to hiring, pay levels and senior positions in the previous three years
- **Can be awarded additional points** in the event that they develop or commit to developing non-financial ESG reporting for each of the financial years included in the duration of the contract



CHAPTER 3

**Are financial operators
on track to provide tailored
and effective sustainable
finance tools to support
European SMEs?**

powered
by

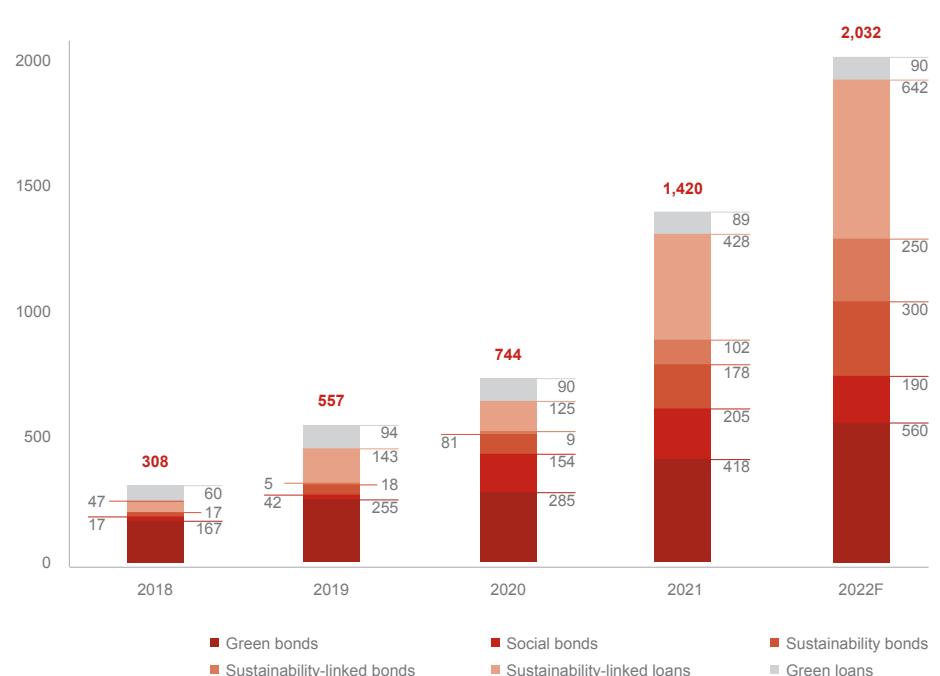


SME
EnterPRIZE

1. Global sustainable finance has experienced tremendous growth in the last few years, increasing by 91% in 2021 and is forecast to break new records in 2022

Global issuance of green, social, sustainability and sustainability-linked bonds or loans reached \$1,400 billion in 2021, up 91% from previous year, and is expected to break new records in 2022, as figures are forecast to surpass \$2,000 billion. Alongside solid growth in green bonds, and consistent levels of social bonds and green loans, the higher growth is due to the exponential development of sustainability-linked bonds and loans, with respective increases in 2021 of 10 and 2.4 times the levels of the previous year. This trend highlights the increased attention to ESG issues from investors and companies, also driven by several events and initiatives such as COP26, or the introduction of new regulations, such as the EU Sustainable Finance Disclosure Regulation (SFDR), alongside the recent amendments and social criteria implementation in the EU Taxonomy.

Global issuance of green, social, sustainability and sustainability-linked bonds or loans (billion \$)

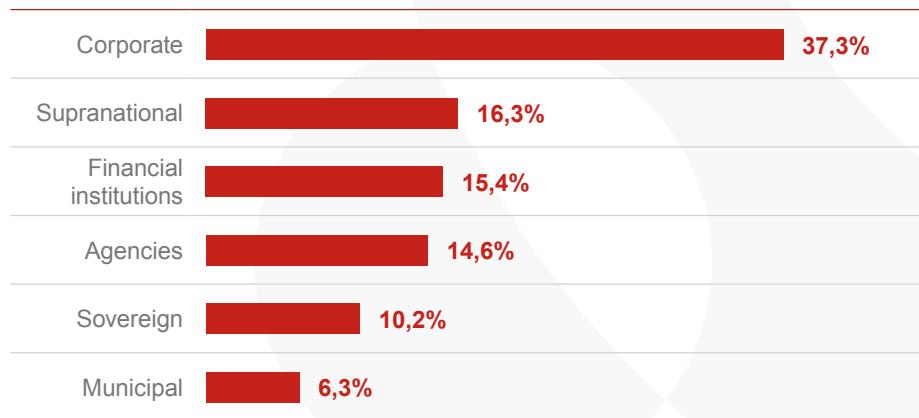


Source:

Authors' elaboration on UniCredit Green Bond and ESG Charbook January 2022, Refinitiv Green Lending Review 2022, S&P Global Ratings, Environmental Finance Bonds Database, Climate Bond Initiative

As regards issuers, more than 1/3 of transactions concerning green, social and sustainability bonds are carried out by corporations, followed by supranational entities (e.g. European Commission, European Investment Bank), and financial institutions, with Europe leading the market with almost 46% of the global issuance in 2021.

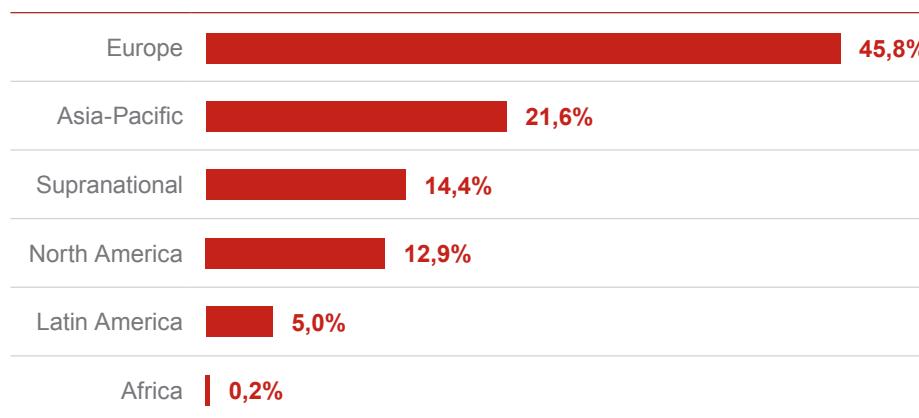
Green, social and sustainability bonds by issuer FY2021



Source:

S&P Global Ratings <https://www.spglobal.com/ratings/en/research/articles/220207-global-sustainablebond-issuance-to-superpass-1-5-trillion-in-2022-12262243>

Green, social and sustainability bonds by geographic distribution FY2021



Source:

Authors' elaboration on UniCredit Green Bond and ESG Charbook January 2022

Green, social and sustainability bonds or loans differ from sustainability-linked bonds or loans in three main characteristics^{3 4}

Firstly, green, social and sustainability bonds or loans can be used exclusively to finance or re-finance new and/or existing eligible green and/or social projects (and thus present eligibility criteria), whereas sustainability-linked options are broader in their scope

Secondly, sustainability-linked instruments incentivise the issuer/borrower to achieve predetermined green, social or sustainability objectives assessed against specific technical criteria/KPIs (also called Sustainable Performance Targets, or SPTs). If KPIs are achieved, the issuer/borrower benefits from better financial conditions, such as a predefined discount in the interest rate or spread

Thirdly, and consequently, while the economic conditions of green, social or sustainability bonds or loans are predetermined from the beginning of the operation, often benefitting from public and/or private guarantees that allow for better financial conditions, and do not vary for the entire duration of the contract, those of sustainability-linked bonds or loans can vary, in a way that may be advantageous for the financed party, based on the achievement of predefined KPIs

3. Principles and guidelines have recently been defined for Green, Social, Sustainability and Sustainability-linked bonds. The International Capital Market Association (ICMA) updated the Green Bond Principles (GBP) in 2018 and in the same year published the Sustainability Bond Guidelines (SBG), while the Sustainability-Linked Bond Principles (SLBP) and Social Bond Principles (SBP) were published in 2020. Green and Social Bonds are any type of bond instrument where the proceeds will be exclusively applied to financing or re-financing, in part or in full, new and/or existing eligible Green or Social Projects, whereas Sustainability Bonds are intended to finance or re-finance a combination of both Green and Social Projects. Sustainability-Linked Bonds are any type of bond instrument for which the financial and/or structural characteristics can vary depending on whether the issuer achieves predefined Sustainability/ESG objectives, within a predefined timeline. The objectives are measured through predefined Key Performance Indicators (KPIs) and assessed against Sustainability Performance Targets.

4. In recent years, the category of sustainable loans has evolved to the point of requiring the Loan Market Association (LMA) to publish the Green Loan Principles in 2018, the Sustainability Linked Loan Principles in 2020, and in April 2021 the Social Loan Principles. Green and Social Loans are dedicated to exclusively financing or re-financing, in whole or in part, new and/or existing eligible Green or Social projects, while Sustainability-Linked Loans are not necessarily aimed at the realisation of specific projects, but incentivise the borrower to achieve ambitious, predetermined sustainability performance objectives. The borrower's sustainability performance is measured using sustainability performance targets, set against KPIs. While the economic conditions of Green and Social Loans are predetermined from the beginning of the contract, and do not vary for its duration, those of Sustainability-Linked Loans can vary, in a way that may be advantageous for the financed party, based on the achievement of the predefined KPIs.

Source:

Authors' elaboration on Amundi (2020) <https://research-center.amundi.com/article/sustainability-linkedbonds-nascent-opportunities-esg-investing>

Main differences between green, social and sustainability bonds or loans and sustainability-linked bonds or loans



2. Eligibility criteria for green, social and sustainability bonds or loans are related to the assessment of the projects and initiatives to be financed, with SMEs still representing only a small fraction of the operations conducted with such instruments

In order to satisfy the eligibility criteria of green, social and sustainability bonds or loans, financeable initiatives must be aimed, for example, at climate change mitigation, natural resource or biodiversity conservation, pollution prevention and control, or, in the case of social-related instruments, at addressing or mitigating specific social issues and/or seeking to achieve positive social outcomes. A combination of both criteria occurs in the case of sustainability instruments. Periodic reporting on the state of the financed activities, and of the actual and expected impacts, should be produced.

In general, bond or loan issuance is based on the principles and guidelines administered by the ICMA (International Capital Market Association) and LMA (Loan Market Association) and aligned with the forthcoming EU Green Bond Standard and the EU classification of environmentally sustainable economic activities, i.e. the EU Taxonomy.

As regards the benefits related to the adoption of such instruments, better initial and predetermined financial conditions are often provided.



Eligibility criteria adopted by the sample of leading international financial operators to finance green, social and sustainability bonds or loans

Eligible Green Project categories	Eligible Social Project categories	Eligible Sustainability Project categories
<ul style="list-style-type: none"> • Renewable energy • Energy efficiency • Pollution prevention and control • Environmentally sustainable management of living • Natural resources and land use • Clean transportation • Sustainable water and wastewater management • Eco-efficient and/or circular economy adapted products, production technologies and processes • Green buildings 	<ul style="list-style-type: none"> • Affordable basic infrastructure (e.g. clean drinking water, sewers, sanitation, transport, energy) • Access to essential services (e.g. health, education and vocational training, healthcare, financing and financial services) • Affordable housing • Employment generation, and programs designed to prevent and/or alleviate unemployment • Food security and sustainable food systems • Socioeconomic advancement and empowerment • Affordable basic infrastructure (e.g. clean drinking water, sewers, sanitation, transport, energy) • Access to essential services (e.g. health, education and vocational training, healthcare, financing and financial services) 	<ul style="list-style-type: none"> • Combination of both Green and Social Projects

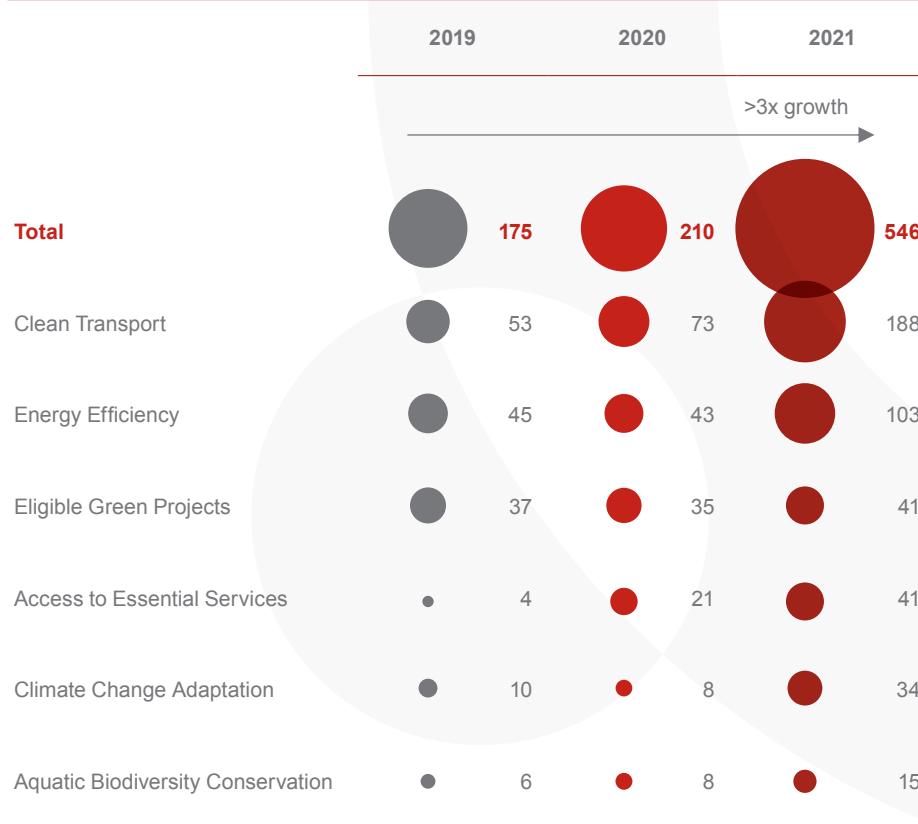
Source:

Authors' elaboration on ICMA (International Capital Market Association) and LMA (Loan Market Association) guidelines and selected top banking operators' documentation

An analysis of the main issuance of green, social and sustainability bonds over the last three years, detailing the use of proceeds related to the eligibility of the projects, shows a more than threefold increase over the period, with projects mainly falling into the category of clean transport, energy efficiency, green projects (e.g. GHG mitigation, circularity and material efficiency), climate change adaptation and aquatic biodiversity conservation.

In relation to social initiatives, bonds are mainly issued to finance projects addressing access to essential services.

**Global green, social, sustainability corporate bonds issuance.
Top 6 use of proceedings (Billion USD)**



Source:
Authors' elaboration on Refinitiv Workspace database

Despite this incredible expansion, SMEs still represent a small fraction of the operations conducted with sustainable finance instruments in the form of green, social and sustainability bonds. A reliable estimate of the incidence of SME-led operations is difficult due to the lack of information regarding smaller operations. Overall, it is reasonable to assume that globally, green, social and sustainability bond transactions with SMEs as counterparties do not exceed 1% of the total.

SMEs still represent a small fraction of the operations conducted with sustainable finance instruments in the form of green, social and sustainability bonds.

UniCredit reaches 100 Italian SMEs supported with €690 million (+ 51% in one year) in mini-bonds

With their most recent operations, the number of small and medium-sized enterprises supported in their development and investment plans by UniCredit has risen to 100. In terms of volume, UniCredit has surpassed the threshold of €690 million, with growth of 51% in a year, confirming that this instrument is increasingly popular among companies to finance development and investment plans.

It is interesting to note that this alternative financing instrument is also increasingly used to finance sustainability-related investments, as **almost 30% of the 2021 issuances handled by UniCredit on behalf of SMEs incorporated ESG objectives**.

In terms of the economic sector of the issuing companies, Food & Beverage - which benefited from the first tranche of the Basket Bond programme for the Supply Chain with CDP, dedicated to the wine sector - and the Telecom & IT sector stand out for the number and volume of transactions. The chemical-pharmaceutical sector follows, but all manufacturing and service sectors are represented, reflecting the growing popularity of these instruments.

The geographical location of the issuers reflects the greater concentration of production activities in the northern regions, but it is the bank's southern region that has recorded the highest numbers by far, thanks also to the 21 Apulian companies that have so far participated in the Puglia Basket Bond.

BNP Paribas: innovating the sustainable bonds market

According to EFdata.org, BNP Paribas – with a total of around €59 billion – is the second leading sustainable bonds issuer worldwide (after JP Morgan with a total of €68 billion) and was named Investment Bank of the Year for Sustainability-Linked Loans by The Ban-

ker in their 2020 Investment Banking Awards. In 2021, BNP Paribas issued around €6.5 billion in sustainability-linked bonds, a more than sixfold increase on 2020 (equal to €963 million). In addition to increasing exposure to the sustainable bonds market, BNP Paribas has focused on innovating sustainability-linked bonds. For instance, it acted as sustainability coordinator for the first biodiversity-linked loan for UPM, a Finnish forest bio-industry company. This loan is linked to net positive biodiversity impact metrics and reduced CO₂ emissions. In a different sector, BNP Paribas has promoted sustainability-linked loans for housing associations and education firms, linking the targets of the bonds to either education or childcare. More recently, it introduced products that broaden the sustainable financing options, linking bonds to ambitious science-based targets that accelerate companies' climate strategies. Finally, BNP Paribas has supported private equity clients and smaller firms, promoting loans linked with climate, gender equality, and sustainability governance targets.

At the end of 2021, sixteen Czech banks and the Czech Banking Association developed the ESG questionnaire template which has been adopted by financial operators

It is expected that the questionnaire will gradually be used by most financial operators. Thus, all major Czech financial operators follow the same criteria for the assessment and evaluation of firms' ESG profiles.

While there is no obligation to evaluate SMEs' ESG profiles, Czech financial operators are launching an ESG assessment and evaluation for larger companies. From January 2026, the requirement for so-called non-financial reporting will also extend to all publicly listed SMEs. In the meantime, financial operators will use some of the criteria from the ESG questionnaire for SME credit applications. For

medium-sized and smaller companies, financial operators are considering a product-specific approach, often in combination with advisory services on various support and subsidy programmes, because SMEs do not have the ESG reporting systems necessary to prepare the documents for loan applications.

However, some financial operators also request information from SMEs to estimate ratings in a simplified form. The rating of SMEs is primarily based on the riskiness of the business sector (according to the NACE code). If the required loan amount or repayment period exceeds a certain threshold, SMEs also complete a questionnaire, which is, however, a shortened version of the full questionnaire used for large companies. In the SME questionnaire, greater emphasis is placed on environmental factors (e.g. carbon footprint, natural hazards).

Financial operators do not guarantee that greener projects will get a percentage discount on the interest rate compared to less green projects. But they guarantee that they will get a better price for the same credit risk. For the same credit risk of comparable projects, the greener project will be cheaper.

Raiffeisen Bank International (RBI) initiatives for sustainable SMEs⁵

RBI has its roots in the very local banking tradition. RBI's customer base consists of, relatively speaking, a high number of SMEs across various sectors, with a particular focus on agriculture. Three initiatives exemplify RBI's successful impact on the sustainable transformation of its (SME) customers through its holistic approach.

Firstly, RBI launched its *Green Bond Program* in 2018 and is currently the largest Austrian issuer of green bonds. As of end of February 2020, the total green loan portfolio amounted to €1.3 billion (+116% compared to end of February 2019). By issuing green bonds, RBI aims to further increase awareness on sustainability within the entire organisation, leading to new initiatives and strategic synergies between internal and external stakeholders, many of them SMEs. The Green Bond framework allows for a wide range of green projects, focusing mostly on green buildings, renewable energy,

5. <https://www.rbinternational.com/en/investors/information-for-debt-investors/green-bonds.html> and <https://www.raiffeisen.at/noew/rbb/de/firmenkunden/finanzieren/going-green-kredit.html>

water and wastewater management, energy efficiency, and clean transportation.

Secondly, RBI launched own products, among them its “Go Green Loan”. This loan is tailored to the specific needs of the ecological transformation of its business customers (in particular SMEs) and incentivised with special conditions (10 basis points). In particular, firms' investments related to climate change, environmental pollution, sustainable resource use, and ecologically-friendly products and technologies are targeted with this specific loan.

Thirdly, RBI seeks to apply a customer solution-oriented approach which requires continuous training for corporate account managers, so that they are aware of how to combine newly developed and existing products to tailor financial instruments to the specific needs of customers, while taking into consideration sustainability requirements.

3. Technical criteria/KPIs are used to assess the achievement of predetermined objectives in the case of sustainability-linked bonds or loans, which can represent a viable instrument to foster the sustainability transition of SMEs

Sustainability-linked bonds or loans are not subject to eligibility criteria with regard to the scope of the projects underlying the financed activities, however they are subject to technical criteria/KPIs to assess the achievement of predetermined objectives, which can trigger better financial conditions.

Such technical criteria/KPIs are generally defined on a case-by-case basis, agreed among the parties (i.e. the borrower and the lender), and periodically verified by external control. Due to the characteristics of the instruments, their credibility greatly depends on the definition of the KPIs.

KPIs should be ambitious, i.e. represent a significant improvement with respect to a business-as-usual trajectory; where possible be compared to an external reference; be consistent with the issuer's or borrower's sustainability strategy; have a predefined timeline; and make systematic reference to science-based scenarios.

The following table highlights several examples of key social and environmental impact indicators provided by LMA or actually adopted by selected international financial institutions. Typical environmental indicators relate to renewable energy production (MWh), reduction in CO₂ or GHG emissions (tonnes), energy savings (MWh), annual energy savings (MWh), environmental certifications (e.g. for buildings), amount of waste and by-products re-introduced in production cycles (tonnes).

In the case of social impact indicators, examples are more sector specific. For example, in the case of sustainability-linked financed projects for affordable housing, they mainly refer to the number of beneficiaries of the social infrastructures, the number of refurbished buildings and surface area, the number of residences constructed or renovated.

Key social and environmental impact indicators adopted by selected European financial operators

ESG Project categories	Social and environmental impact indicators - KPIs
Renewable Energy/Greenhouse gas emissions	<ul style="list-style-type: none"> Increases in renewable energy generated or used Reductions in GHG emissions in relation to products manufacturing cycle Annual GHG emissions reduced/avoided (tons CO₂eq) Annual renewable energy generation in MWh Capacity installed (MW) Energy savings in MWh
Green Buildings	<ul style="list-style-type: none"> Improvements in the energy efficiency rating of buildings and/or machinery owned or leased Annual energy savings in MWh Annual GHG emissions reduced/avoided (tons CO₂eq) Gross Building Area Environmental Certifications (for buildings, number)
Clean Transportation	<ul style="list-style-type: none"> Number of trains deployed Number of km of new electric train lines created/maintained Number of km of new electric bus lines created/maintained Number of passengers transported per year
Pollution prevention and control	<ul style="list-style-type: none"> Increases in the use of verified sustainable raw materials/supplies % of waste recycling Tons of waste processed
Sustainable Water and Wastewater Management	<ul style="list-style-type: none"> Water savings made by the borrower m³ of water processed Km of water pipeline constructed/renewed Water savings

Biodiversity	<ul style="list-style-type: none"> Improvements in conservation and protection of biodiversity
Circular economy	<ul style="list-style-type: none"> Increases in recycling rates or use of recycled raw materials/supplies Recovered materials due to product re-design, new business models and/or reverse logistics (tons) Amount of waste and by-products re-introduced into production cycles (tons)
Environmentally sustainable management of living natural resources and land-use	<ul style="list-style-type: none"> Ecologically sustainable agricultural production tons/ha Afforestation (additional forestation) areas Preserved natural areas
Sustainable farming and food	<ul style="list-style-type: none"> Improvements in sourcing/producing sustainable products (appropriate labels or certifications)
Healthcare	<ul style="list-style-type: none"> Number of hospital beds Number of medical examinations
Social Assistance	<ul style="list-style-type: none"> Number of beds Number of beneficiaries Number of healthcare/ education facilities Number of outpatient and inpatient rehab
Education	<ul style="list-style-type: none"> Number of students served Number and type of initiatives supporting public university education
Affordable housing	<ul style="list-style-type: none"> Increases in the number of affordable housing units developed by the borrower Number of beneficiaries of social infrastructures Number of refurbished buildings and surface Number of residences constructed or renovated
Employment generation	<ul style="list-style-type: none"> Number of SMEs financed Number of employees working in the SMEs financed
Social Impact Banking	<ul style="list-style-type: none"> Number of beneficiaries organisations supported Number of people of disadvantaged vulnerable groups improving material living conditions Number of mortgages to target population Number of microfinance loans Number of loans to target population
Global ESG assessment	<ul style="list-style-type: none"> Improvements in the borrower's ESG rating Achievement of a recognised ESG certification

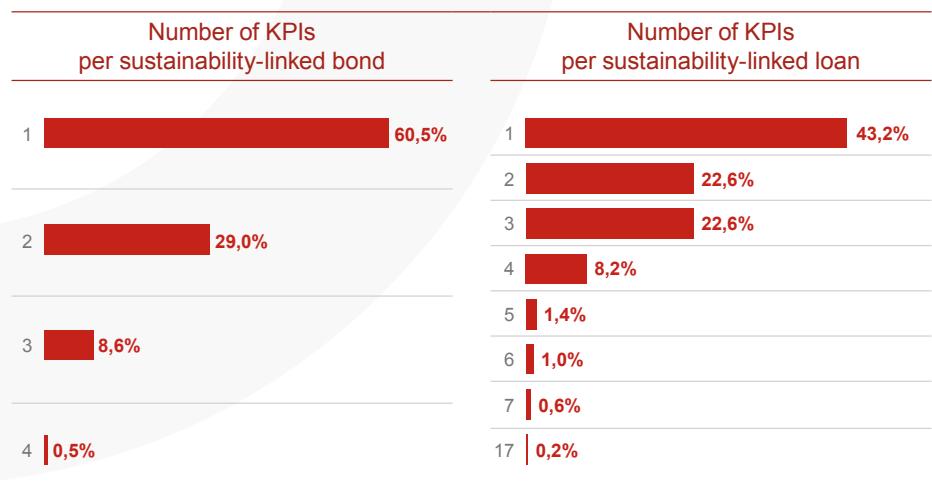
Source:

Authors' elaboration on Social environmental impact indicators provided by LMA, and selected top European banking operators' documentation

6. Environmental Finance Data (2022) Sustainability-linked bonds and loans – Key Performance Indicators (KPIs) <https://www.environmental-finance.com/content/downloads/sustainability-linked-bonds-and-loans-kpis.html>

According to a recent analysis⁶, covering a global sample of sustainability-linked bonds and loans worth respectively \$100 bn and more than \$180 bn, 6 out of 10 sustainability-linked bonds and 4 out of 10 sustainability-linked loans most commonly have just one KPI, with sustainability-linked loans more likely to have multiple KPIs than bonds. In relation to the frequency of environmental and social KPIs, the same research highlights that green KPIs largely outweigh social ones, and, among green KPIs, carbon-GHG emissions-related targets represent more than 41% of the total.

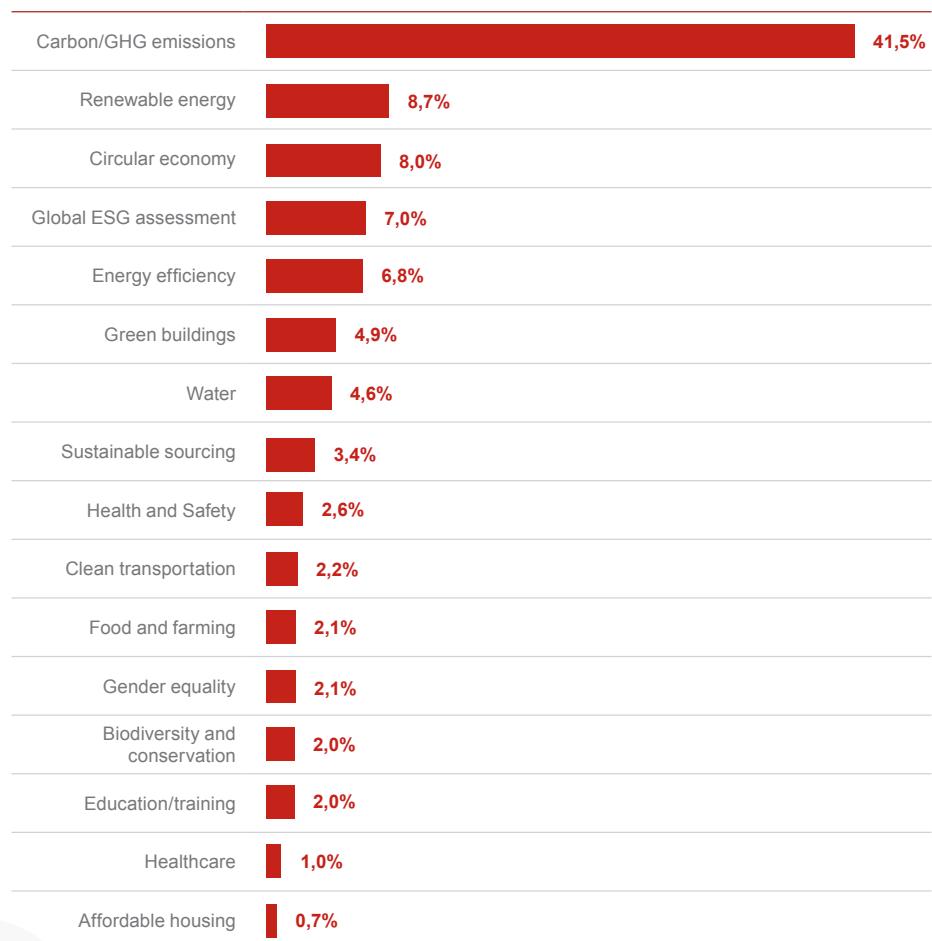
Frequency of environmental and social KPIs in sustainability-linked bonds and loans



Source:

Authors' elaboration on Environmental Finance Data (2022) Sustainability-linked bonds and loans – KeyPerformance Indicators (KPIs) <https://www.environmental-finance.com/content/downloads/sustainability-linkedbonds-and-loans-kpis.html>

Frequency of environmental and social KPIs in sustainability-linked bonds and loans by subject matter



Source:

Authors' elaboration on Environmental Finance Data (2022) Sustainability-linked bonds and loans – KeyPerformance Indicators (KPIs) <https://www.environmental-finance.com/content/downloads/sustainability-linkedbonds-and-loans-kpis.html>

Accessing reliable data on the incidence of SME transactions financed globally or at the European level by sustainability-linked bonds or loans is extremely complex, for various reasons, in particular related to the lack of transparency of the market for sustainability-linked products, and the fact that the financial instruments are basically bonds or loans that are not aimed at specific uses, to which covenants are attached regarding the achievement of one or more KPIs. Often, information on SMEs' transactions is derived from press reports and public statements by the participating parties (e.g. lender and financed company).

On the basis of information gathered through experts and representatives in the sector, it is reasonable to assume that, due to the characteristics of the products, the number of transactions with small and medium-sized counterparties, although not widespread, is **higher than that with green, social and sustainability bonds**, and further growth is expected in the near future, especially in the form of sustainability-linked loans.

Sustainability-linked instruments are expected to grow in the near future and represent an opportunity for SMEs.

Intesa Sanpaolo has allocated €2 billion for S-Loans (i.e. sustainability-linked loans), specifically aimed at SMEs

In 2020, Intesa Sanpaolo created a specific line of instruments to support sustainability transition business initiatives with a reward mechanism for the achievement of specific broad-spectrum sustainability objectives. Thanks to the renewed partnership with SACE, the new S-Loan Climate Change loan provides a combined 80% SACE guarantee to finance green investment projects up to an amount of €15 million and for a maximum duration of 20 years.

The SACE guarantee is issued through a simplified and digitised process for the benefit of decisive domestic projects for the future and in line with the assessment criteria and taxonomy defined by the EU.

Upon achievement of at least two of the objectives set, the double mechanism within the S-Loan formula is activated, which includes a premium for the company in terms of the cost of the loan.

4. The diffusion of sustainable finance instruments among European SMEs is still a recent and not widespread phenomenon, due to shortcomings attributable both to SMEs and to the dedicated offering and consideration on the part of financial operators

Based on the information collected and interviews with informed experts, the use of green, social, sustainability and sustainability-linked bonds and loans among European SMEs is still limited, compared to the market potential.

This is due to several specific reasons:

Sustainable finance among European SMEs is still a recent and not widespread phenomenon, due to shortcomings attributable both to SMEs and to the dedicated offering and consideration on the part of financial operators.

- **Lack of strategic thinking.** Experts and informed observers, including financial managers, dealing with SME customers note the informal approach to sustainability and the relative absence of sustainability strategies or goals on the part of SMEs. The absence of general strategic thinking favours rather short term and operational decision-making
- **Lack of professionalism in European SMEs**, in which a CFO figure is often not present and where financial matters are often delegated to the owner who does not necessarily have knowledge of the tools of sustainable finance
- **Lack of ability to produce information in a standardised way.** Smaller firms are generally not able to disclose relevant data, as SMEs lack the resources, expertise, and incentives to produce the necessary information to inform technical criteria and KPIs. Publicly available data on SMEs, whether produced by the company or from independent sources, are high level and often insufficient to provide an appropriate assessment against the needs of the banking system, which is already being pushed to conform to the EU Taxonomy. SMEs are generally not accustomed to collecting the level of information required, as they typically focus on conforming to the requirements of local legislation and permits⁷
- **High level of complexity with regard to sustainability regulations**, which creates uncertainty and potentially inertia on the part of both financial institutions and SMEs. EU regulation is therefore perceived as a double-edged sword. While its high potential for the sustainability transformation is well received, its complexity has led some financial institutions to delay implementing the measures, as they wait for clear operational guidelines

7. See also European Banking Federation, UNEP Finance Initiative (2021), *Testing the application of the EU Taxonomy to core banking products: High level recommendations* <https://www.ebf.eu/wp-content/uploads/2021/01/Testing-the-application-of-the-EU-Taxonomy-to-core-banking-products-EBF-UNEPFI-report-January-2021.pdf>

- **Minimum size of operations is often too small to make deals worthwhile.** The size of SMEs' financing and loan requirements is relatively small in comparison to large companies. Therefore, the potential benefits of sustainability-linked banking are also limited, and, thus, the administrative costs of managing sustainability may outweigh the potential financial benefits. As a result, assessing the alignment of SMEs activities against ESG criteria often relies on manual and individual intervention that is inefficient and costly, both for SMEs and financial operators. This results in increased transactional costs⁸
- **Lack of perception of sustainability as part of the retail business.** Despite the trend towards an ever-increasing importance of ESG issues, both from the point of view of markets and of EU regulation, most banks, especially smaller ones, don't yet perceive sustainability banking as part of their retail business. Therefore, there are limited ranges of products to offer, and the staff that interacts with SMEs are not trained

Good practices to help increase uptake of sustainable finance tools among European SMEs

Credit Guarantee Schemes (CGSs) have been implemented in the EU in the last 20 years, although not specifically focused, until recently, on ESG issues. Credit guarantee mechanisms are a commonly used response to market weaknesses for corporate access to finance. Guarantees usually reduce the risk for lenders/investors and favour the provision of financing to viable businesses that are limited in their access to finance. As an example, SACE, the Italian Export Credit Agency, extended its operations in support of the EU Green Deal, as part of the broadening of its mandate. In 2020, SACE was authorised to issue green guarantees, allocating €2.5 billion. Projects that can be guaranteed, in partnership with private financial institutions, must facilitate the transition towards a low-impact economy, integrating production cycles with low-emission technologies, and promoting new mobility with lower polluting emissions. On this point, SACE issues a "green rating" in relation to eligible projects, which therefore have easier access to funding and reduced spreads. The request for green guarantees by SMEs is significant, equal to

8. See also European Banking Federation, UNEP Finance Initiative (2021), *Testing the application of the EU Taxonomy to core banking products: High level recommendations* <https://www.ebf.eu/wp-content/uploads/2021/01/Testing-the-application-of-the-EU-Taxonomy-to-core-banking-products-EBF-UNEPFI-report-January-2021.pdf>

approximately 75% of the applications presented to SACE. At EU level, the latest guarantee instrument, pursuing environmental and social objectives, is the Pan-European Guarantee Fund (EGF), aimed at alleviating the damage caused by Covid-19, with a total allocation of €25 billion, 65% of which is dedicated to SMEs.

Basket bonds. In cases where the minimum bond investment size is below a certain threshold that would be of interest to some types of investors, a typical case for SMEs, experience indicates the possibility of resorting to instruments aimed at combining the issues of SMEs in basket bonds, in which small and medium-sized companies coordinate their bond issues in a larger vehicle, often backed by public guarantees. Italy has developed particular experience in this field, with the first issues of pool bonds in 2014. The Basket Bond Puglia programme has reached 21 issuers to date with a volume of resources mobilised equal to €87.2 million. In 2021, new tranches of issues from 7 SMEs were finalised for an invested capital amount of €35 million. The investors are Cassa Depositi e Prestiti (CDP), Mediocredito Centrale-Banca del Mezzogiorno and UniCredit, which also plays the role of arranger. Also worthy of mention is the Sustainable Energy Basket Bond initiative launched by Eni in collaboration with ELITE and Illimity, a supply chain finance project that intends to support companies, especially SMEs, that are suppliers of the Eni group. The goal is to accompany and support the issuance of mini-bonds to finance projects aimed at improving ESG sustainability parameters and achieving the Strategic Development Goals (SDGs). And most recently, French bank Crédit Agricole launched the idea of a basket bond dedicated to small and medium-sized enterprises in the agri-food sector, with issues between €2 million and €10 million⁹.

5. Sustainable Insurance represents a lever for change and an opportunity for the sector and for SMEs' sustainability transition

9. Politecnico di Milano (2022), 8° Report italiano sui minibond <https://www.osservatorielfi.it/elfi/wp-content/uploads/2022/03/reportminibond2022-1.pdf>

For many decades, insurance has been one of the main vehicles for businesses to assess and manage risk. Through their strategic roles as risk managers, insurers and investors, the insurance industry holds a critical position in the global efforts for a just sustainability transition in the business landscape.

The insurance industry is Europe's largest institutional investor and an important provider of stable, long-term funding for businesses, increasingly driven by ESG considerations, embedded in sustainability strategies and financial products. Moreover, insurance companies act as technical advisors to businesses, enabling companies, in particular SMEs, to assess and manage risks, including those of an environmental and social nature. Through coverage products, insurance can contribute to increasing corporate resilience. In addition, with reference to services relating to corporate welfare, insurance represents an incredible enabler for the creation and consolidation of corporate strategies aimed at the well-being and protection of employees.

2022 marks the 10-year anniversary of the UNEPFI Principles for Sustainable Insurance (PSI) Initiative

The UNEPFI Principles for Sustainable Insurance were launched 10 years ago at the 2012 UN Conference on Sustainable Development in Rio de Janeiro, endorsed by the UN Secretary General and CEOs of the insurance industry. They constitute the largest and most significant collaboration between the UN and the insurance industry to date. Today, more than 200 organisations have joined the PSI initiative, including insurance providers that represent 1/3 of global premiums and USD15 trillion in assets.

The 4 “Principles” are:

- Principle 1: “We will embed in our decision-making environmental, social and governance issues relevant to our insurance business”
- Principle 2: “We will work together with our clients and business partners to raise awareness of environmental, social and governance issues, manage risk and develop solutions”
- Principle 3: “We will work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues”
- Principle 4: “We will demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles”



The PSI Initiative cemented the idea and discipline of sustainable insurance. Sustainable insurance constitutes a strategic approach in which all activities across the insurance value chain are performed in a responsible and forward-looking way through the identification, assessment, management and monitoring of risks and opportunities associated with ESG issues. As such, sustainable insurance aims to reduce risk, develop innovative solutions, improve business performance, and contribute to economic, social and environmental sustainability.

The PSI requires all members to demonstrate the adoption of sustainable insurance practices and transparent disclosure around ESG issues.

With the sustainable insurance products and instruments already on offer, on-boarding SMEs in the transitional journey constitutes a major challenge for the industry, as well as an unprecedented opportunity for insurance sustainability champions to expand their ESG portfolio.

6. European insurance operators have been active in providing, or are in the process of launching, new products and instruments in support of the ESG performance and sustainability transition for businesses, including SMEs, although not specifically targeted to these types of companies

The insurance industry has started exploring the re-purposing of existing insurance products from other segments, such as personal insurance, and adjusting them for corporate needs.

The insurance industry has started exploring the re-purposing of existing insurance products from other segments, such as personal insurance, and adjusting them for corporate needs.

On top of mainstream ESG or climate change risk management and consulting services, the focus of the current sustainable insurance offering is mainly twofold:

- **Environmental (or green):** this line of business has been undergoing rapid development in the last decade, in part as a result of initiatives taken by the business and financial community to respond to climate change. Sustainable insurance products of an environmental or “green” nature regard, among other things, the insurance of renewable energy solutions, energy efficiency, green mobility, environmental liability and damage coverage, biodiversity and agriculture risk policies or products promoting circular economy solutions, to name but a few. A compact overview of current examples of environmental or “green” sustainable insurance products and instruments offered by top European insurance providers (e.g. Generali, Allianz, AXA, Mapfre, VIG) in the European market, is presented below, grouped under five clusters in accordance with their area of focus
- **Social (or welfare):** the sustainable insurance offering with a social and welfare focus regards beneficial premiums and policies around life and health insurance on the one hand, and products addressing the welfare needs of employees on the other. These include life and health insurance products at affordable premiums, substitution or upgrade of public health insurance, incentives for preventive medicine, connected insurance products to improve well-being or complementary pension schemes, among others

Net-Zero Insurance Alliance: Mobilising the Insurance industry to enable the net-zero transition

The Net-Zero Insurance Alliance (NZIA) was launched at the G20 Climate Summit of July 2021 in Venice by its eight founding members: AXA, Allianz, Aviva, Generali, Munich Re, SCOR, Swiss Re and Zurich Insurance Group. The Alliance is aligned with the Principles for Sustainable Insurance (PSI).

The UN-convened NZIA today counts over 20 leading insurers as members, representing more than 12% of the global volume of premiums and more than USD 7 trillion in assets under management. NZIA members are committed to transitioning the underwriting portfolios of both their insurance and reinsurance businesses to net-zero greenhouse gas (GHG) emissions by 2050, in accordance with

a maximum 1.5°C temperature increase above pre-industrial levels by 2100, thus contributing to the implementation of the Paris Agreement on Climate Change. The decarbonising of the underwriting portfolios of NZIA members is put in motion through setting individual science-based intermediate targets and reporting annually on their progress.

The NZIA aims to move further in advocating for and engaging in governmental policymaking for a science-based and socially just transition to a net-zero economy. To achieve higher inclusivity, NZIA aims to expand its membership towards other market participants such as brokers and insurance associations.

What becomes apparent from the current sustainable insurance offering in Europe, is that sustainable insurance products and policies with an environmental or “green” label are much more widely developed and commercialised than their social counterparts. This presents a substantial opportunity for insurance providers to develop and supply the market with differentiating sustainable insurance products that take the health and wellbeing of their clients’ human capital into consideration, especially after the challenges generated by the Covid-19 pandemic, while continuing to improve and diversify their environmentally-tailored sustainable offering.

Overview of environmental insurance offering

Environmental (or green)

Cluster E1: Renewables, Energy Efficiency & Sustainable Technology

- Preferential rates on premiums for companies with environmentally-friendly and renewable assets
 - Renewable energy insurance solutions: wind (onshore and offshore), photovoltaic, geothermal, biomass and grid connections (e.g. smart grids, High Voltage Direct Current (HVDC) transmission systems)
 - Green building solutions, including rebuilding incentives to green standards
 - Energy efficiency in installations policies (e.g. LED installation; installation of high-performance windows; installation of charging points for electric vehicles; energy certificates)
 - Energy efficiency advisory accompanying insurance products
 - Property and loss of profit/ business interruption coverage for renewable energy generation assets
 - Insurance coverage for the development of EV batteries
 - Energy risk - low carbon performance insurance: performance insurance solutions for the technical risk associated with breakthrough low-carbon technologies (e.g. renewable energy, fuel cells, energy storage, energy efficiency, carbon capture, hydrogen, waste to energy, and biofuels)
 - Digital toolset to help clients better handle environmental and weather-related risks
 - Lower premiums for or incentives for upgrading to green IT infrastructure
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Cluster E2: Green mobility

- Lower premiums for or incentives for upgrading to green commercial fleets (electric/ hybrid/ low emission vehicles)
 - Insurance for cars under "Pay as you drive"/ "Pay per use" schemes
 - Policies on the basis of specific packets of kilometres driven
 - Alternative mobility solutions: electric car, bike, scooter insurance, bonus drive applications
 - "Repair instead of replace" schemes (green claims management)
-

Cluster E3: Environmental liability & responsibility

- Environmental impairment liability, damage coverage and guarantee
 - Special policies to companies adopting safety measures to prevent environmental damages
 - Damage and civil liability policy for renewable energy facilities and equipment that covers the different phases of design, construction, start-up and operation
 - Third-party liability coverage for vehicles that improve people's sustainable mobility options
 - Preferential rates for companies with environmental management systems in place
-

Cluster E4: Circular Economy, Recycling & Certifications

- Insurance for Circular Economy products that reduces waste in the event of a client's loss, encourages clients to follow sustainable practices and enables circular business and production models (materials re-enter the supply chain, are otherwise reused or recycled)
 - Special policies to companies with environmental certifications (e.g. ISO 14001, EMAS)
 - Lower premiums for or incentives for upgrading to eco-labelled appliances/ machinery (green claims management)
-

Cluster E5: Agriculture & Biodiversity

- (Sustainable) crop and forest insurance products
 - Forest Mass Fire coverage
 - Strengthened insurance criteria for policies on business activities that actively contribute to deforestation (sustainable forest management)
 - Biodiversity Risk policy: reduction on clients' deductibles for environmental risk policies to support their efforts to be responsible
 - M&A Environmental policy that facilitates the rehabilitation of former polluted industrial sites and helps limit artificialization of soil and biodiversity loss
 - Parametric insurance as a response to atypical climate events such as a very hot winter or a very rainy summer, which can disrupt agricultural output and stress vulnerable populations, especially when linked to food security
-

Overview of social-related insurance offering

Social (or welfare)

Cluster S1: Life & Health insurance

- Preferential rates on life and health insurance for companies demonstrating excellence in social and welfare indicators
- Substitution or upgrade of public health insurance (e.g.: Supplementary & Complementary health insurance, Dread Disease or Long-Term Care coverage)
- Products linked to promotion of health-risk mitigation and prevention (e.g. preventive medicine)
- Products linked to promotion of responsible and healthy lifestyles
- Accident and health (A&H) insurance/ worker compensation as part of an overall workforce health and safety policy (esp. for industry-based occupation)

Cluster S2: Welfare & Well-being

- Complementary pension schemes
- Insurance linked with promotion of employee well-being (e.g. mental health programmes)
- Subsidized products for businesses that support social welfare

Cluster S3: Emerging risk, Underserved Markets & Social Development

- Property coverage for social / not-for-profit enterprises
- Insurance for vulnerable companies/ employees
- Coverage for market failures/ externalities (e.g. employees with pre-existing conditions, employees with disabilities, employees with chronic disease)
- Accompanying insurance products with provision of consulting services on advancing social development goals for insured companies (e.g. enhancing gender equality in workforce, ethical behaviour)

While this array of sustainable insurance products and instruments has been offered to the business community by several insurance providers in the last few years, there is still an enormous space to design offerings specifically dedicated to and targeted at SMEs. Since these constitute the backbone of the European and global economy, a significant market gap as well as an unprecedented opportunity can be identified in the SME sustainable insurance scene.



Building resilience against the “unpredictable” through Natural Catastrophe (NatCat) Insurance programmes

Natural Catastrophe (NatCat) insurance constitutes the insurance sector's answer to coverage for losses or damage caused by natural disasters. NatCat aims to fill the protection gap created by mainstream commercial (and personal) insurance policies by providing coverage against natural named perils such as earthquakes, floods, windstorms, hurricanes, wildfires and more. Loss or damage claims can include not only property (buildings) or contents (equipment), but business interruption as well, whether the latter refers directly to the inability of a business to operate internally or to problems caused upstream due to supply chains disruptions (contingent business interruption).

Providing protection against less frequent, less predictable, severe types of perils like the ones resulting from natural disasters through a NatCat insurance product could result in very extensive losses and damage, exposing insurers to substantial financial risk. The insurance industry has responded to such risk by creating a protection mechanism that usually unfolds across three levels. A NatCat component offered to a business can be underwritten by one insurance provider (often the case with SMEs) or be built on risk shared (signed line or participation) by multiple insurers (often the case with big corporations). The insurers' property portfolios are further protected on a second line of coverage through NatCat re-insurance products. A third level of coverage may sometimes include the coverage of the latter through retrocession products (insurance for re-insurance). These three levels of protection are instrumental in providing a certain level of financial sustainability and resilience to the insurance sector, which is fundamental for the sustainable provision of protection to businesses.

NatCat insurance compensates for losses and damage caused by natural disasters, the frequency or severity of which have been steadily advancing due to climate change. 2021 marked \$270 billion in losses attributed to natural catastrophes globally, out of which only 40% were insured. Europe experienced one of the costliest events in history in July of 2021 with the flooding in Germany, Belgium and surrounding countries which resulted in \$13 billion in insured losses and total economic losses estimated upwards of \$40 billion.

NatCat is part of the wider catastrophe risk insurance sector which also includes products offering protection against manmade perils like terrorism or cyber-attacks (silent-cyber or cybersecurity) or pandemics, the significance of which was accentuated when the global community experienced Covid-19's effects on business continuity and employee health and safety.

7. The world of finance, both on the banking and insurance side, is developing an unprecedented number of ESG products, on a wave of hype that is breaking all records. Unfortunately, the number of SMEs involved is still limited, although there are examples of good practices

The growth figures of the ESG phenomenon in the financial market are astonishing, although it cannot be ruled out, and is indeed likely, that not all products labelled as “green” or “social” or “sustainable” can actually be considered as such due to a failure to meet requirements. Recently, there have been episodes of intervention by regulatory and supervisory authorities to verify the correctness of environmental and social claims. In addition, it is arguable whether instruments characterised by a single (or a limited number of) sustainability indicator(s) can actually be defined as ESG products in the absence of effective allocation of the finance provided towards environmental, social or sustainability projects.

Beyond these considerations, the dissemination of such instruments among SMEs is still greatly underdeveloped and far below market potential. In Italy alone, recent research conducted by Cerved Rating Agency estimates the potential market for green mini-bonds at €7.5 billion for 2022 with over 794 potential new issuers belonging to the eight sectors most exposed to the energy transition¹⁰.

10. Politecnico di Milano (2022), 8° Report italiano sui minibond <https://www.osservatoriefi.it/efi/wp-content/uploads/2022/03/reportminibond2022-1.pdf>

There are still barriers that prevent SMEs from accessing sustainability-related services and products, due to:

- **Characteristics of SMEs** and the lack of formalised strategic approach (e.g. lack of professionalism in European SMEs, lack of formal ESG strategy/plan, or systematic reporting on ESG issues) which also prevent the production of information in a standardised way, amplified by the lack of simplified frameworks or tools designed around the capabilities and resources of SMEs
- **Reduced consideration from some financial operators**, who do not always find it worthwhile, beyond marketing/advertising claims, to massively develop or offer tailored ESG financial products targeted to SMEs

Beyond these considerations, on the side of products tailored to SMEs, **there are good practices**, where public-backed guaranteed instruments or the adoption of mechanisms to share the costs and complexities inherent in accessing bond markets through basket bond instruments have proven to produce positive results in terms of SME involvement.

On the insurance side, the market appears to be undergoing significant development, with many operators in the process of redefining or repositioning more or less “traditional” products in the environmental and/or social sector, although an offer truly tailored to the needs and characteristics of SMEs does not appear to be widespread as yet, highlighting enormous opportunities for the sector in terms of development of the offering and the involvement of SMEs.



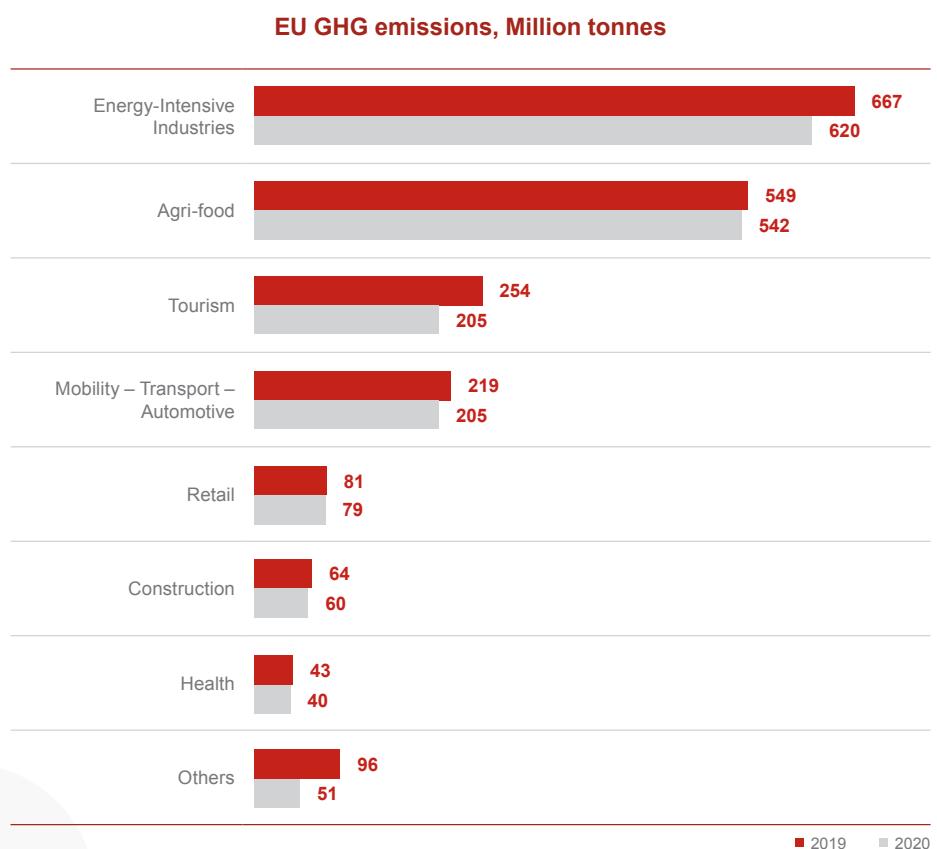


CHAPTER 4

What are the transformative drivers that will affect the sustainability transition in the energy-intensive industries and agri-food ecosystems? Are SMEs aware of such transformative drivers and ready to embrace the evolution?

1. Reducing GHG emissions is a priority. The last report from the Intergovernmental Panel on Climate Change (IPCC) assessed that to meet the 1.5°C warming target of the Paris Agreement, global GHG emissions need to peak before 2025 at the latest and be reduced by 43% by 2030

Even in this scenario it is almost inevitable that the temperature will temporarily exceed the threshold but could return below it by the end of the century¹¹. To achieve these figures, efforts from all industrial ecosystems are needed, starting from the ones that present the largest climate footprint. We focused our analysis on energy-intensive industries and agri-food ecosystems, which have the highest level of GHG emissions, accounting for a combined 41% of total EU emissions. Unless these ecosystems can lower their impact, achieving GHG reduction targets will be out of scope.



¹¹. IPCC (2022), Climate Change 2022: Mitigation of Climate Change, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf

Source:

Authors' elaboration on Eurostat data Air emissions accounts by NACE Rev. 2 activity [ENV_AC_AINAH_R2_custom_2826247]. Electricity, gas, steam and air conditioning supply, water supply, sewerage, waste management and remediation activities, not included as ecosystems according to EU classification, as providers to other ecosystems

The reduction in emissions in 2020 is linked to the Covid-19 pandemic, and according to some initial projections, in 2021 CO2 and GHG emissions started to rise again considerably.

Energy-intensive industries, including chemicals, steel, paper, plastics, refineries, cement, wood, rubber, non-ferrous metals, glass, and ceramics, are responsible for 22% of EU GHG emissions. They supply intermediate products to almost all other industrial sectors. Besides being energy intensive by nature, they also have impacts on the environment along their value chains. SMEs represent 99.4% of companies active in the ecosystem and account for 51.2% of employed workers.

Energy-intensive industries face multiple, interrelated challenges. In the first place, the challenge of decarbonisation in line with the EU's climate neutrality ambitions by 2050, complemented by the need to scale-up new, climate-neutral, digital and circular innovation and investments, while providing high-quality employment and performing the transition in a just and socially fair manner, in a context of intense international competition and geopolitical turbulence¹².

Reducing industrial GHG emissions is more difficult than in most other ecosystems, for technical and economic reasons (e.g. change in fuels not always possible, massive switch to zero-carbon electricity to generate high-temperature heat is difficult due to change in process design required, high integration of industrial processes, long lifetimes of facilities requiring costly rebuilds or retrofits). Several reports highlight that energy-intensive industries (e.g. ammonia, cement, ethylene, and steel sectors) could reduce their CO2 emissions to almost zero by 2050 with energy-efficiency improvements, zero-carbon electric production of heat, use of hydrogen and biomass as feedstock or fuel, and carbon capture¹³.

The last IPPC Assessment Report estimated mitigation options and their range of potential by 2030 for several sectors. The industrial sector is estimated to be in a position to cut its global emissions by 5.66 GtCO2eq by 2030, i.e. more than 40% of its 2019 global GHG emissions, by investing in fuel switching (37% of the potential reduction, including low-carbon synthetic fuels and zero-carbon electrification), efficiency (36%, including 20% energy efficiency and 16% material efficiency), enhanced recycling and circularity (8% of potential reductions), feedstock decarbonisation (7% of reductions)¹⁴.

The agri-food ecosystem, including operators in the food supply chain (farmers, food industry, food retail and wholesale, food services) and their suppliers of inputs and services (e.g. seeds, pesticides, fertiliser, machinery, packaging), are responsible for 19% of EU GHG emissions. SMEs are the backbone of the agri-food ecosystem, as 99% of companies are SMEs, representing 60% of employment and 47.5% of turnover.

In 2020, the agri-food ecosystem emitted 542 MtCO2e of GHG (mostly carbon-dioxide, methane, nitrous dioxide). More than half of these emissions derive from cattle and other livestock, followed by crop production with 30%, and energy consumption with 15%¹⁵. In animal production, 65% of GHG emissions are due to methane from animal digestive processes (i.e. enteric fermentation), along with manure management, which also emits CO2, whereas in crop pro-

All the economic ecosystems, particularly those with the largest environmental footprint, will be exposed to transformative drivers and complex challenges.

12. European Commission (2021), *Commission Staff Working document. For a resilient, innovative, sustainable and digital energy-intensive industries ecosystem: Scenarios for a transition pathway*, Brussels, 27.9.2021 SWD(2021) 277 final <https://ec.europa.eu/docsroom/documents/47059/attachments/1/translations/en/renditions/native>
13. McKinsey & Company (2018), *Decarbonization of industrial sectors: the next frontier* <https://www.mckinsey.com/business-functions/sustainability/our-insights/how-industry-can-move-toward-a-low-carbon-future>
14. IPCC (2022), *Climate Change 2022: Mitigation of Climate Change*, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf
15. McKinsey & Company (2020), *Net-zero Europe* <https://www.mckinsey.com/~media/mckinsey/business%20functions/sustainability/our%20insights/how%20the%20european%20union%20could%20achieve%20net%20zero%20emissions%20at%20net%20zero%20cost/net-zero-europe-vf.pdf>

duction half of GHGs are due to synthetic fertilisers releasing nitrous oxide, a green-house gas 260 times more powerful than carbon-dioxide with regard to global warming.

Curbing GHG emissions in agriculture is extremely challenging for technical, economic and social reasons, as most emissions derive from natural processes (e.g. enteric fermentation) whose full elimination is still not technologically feasible, while changes in agricultural practices need to be calibrated to reduce their impact on more than 10 million farms, providing food security, rural welfare, biodiversity protection, social, cultural and heritage services¹⁶.

The pathway to GHG reduction in the agri-food ecosystem would consist mainly of eliminating emissions from farm energy use (e.g. zero-carbon electrification) and reducing animal protein production emissions by 26% and crop production emissions by 27%. Reduced consumer demand for beef and dairy products is also expected to reduce the ecosystem emissions¹⁷.

The agri-food ecosystem, besides its role as a GHG emitter, is also a cornerstone to achieving the 2050 “net zero” emissions targets, implementing GHG nature-based solutions to capture and sink carbon dioxide long-term.

2. The need to move swiftly along the path of climate transition, exacerbated by the current tensions in international markets, will expose companies in these ecosystems, and in particular SMEs, to complex challenges

Reducing GHG emissions requires investment and increases in the cost of doing business in several ecosystems, including the energy-intensive industries and the agri-food sector. According to estimates, the transition to net-zero would cause the loss of 6 million jobs in the EU, with the creation of 11 million new job opportunities, while close to 20 million workers will need training and support for the transition. In terms of investment, an average of €800 billion per year in capital spending would need to shift from carbon-intensive technologies to low- carbon technologies. An additional €180 billion would need to be invested each year, a sum which would be offset by savings in operating expenses¹⁸.

16. McKinsey & Company (2020), Net-zero Europe <https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/how%20the%20european%20union%20could%20achieve%20net%20zero%20emissions%20at%20net%20zero%20cost/net-zero-europe-vf.pdf>

17. McKinsey & Company (2020), Net-zero Europe <https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/how%20the%20european%20union%20could%20achieve%20net%20zero%20emissions%20at%20net%20zero%20cost/net-zero-europe-vf.pdf>

18. McKinsey & Company (2020), Net-zero Europe <https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/how%20the%20european%20union%20could%20achieve%20net%20zero%20emissions%20at%20net%20zero%20cost/net-zero-europe-vf.pdf>

To analyse the level of awareness and preparedness of SMEs in relation to the changes that will necessarily take place in the coming years, we have identified several transformative drivers, many of which are interrelated and complementary:

- **Decarbonisation** is linked to the progressive reduction and elimination of GHG emissions. Scope 1 and Scope 2 emissions are produced directly by burning fossil fuels or by hydrofluorocarbon (HFC) fugitive emissions from refrigeration and air conditioning equipment, or indirectly through the purchase of energy. In the agri-food ecosystem, Scope 1 emissions are also due to enteric fermentation (methane) and to the use of synthetic fertilizers (nitrous dioxide). Scope 3 emissions are generated in the upstream and downstream value chains, accounting for up to 80% or more of their overall climate impact for many companies. Although being itself a transformative driver, decarbonisation can benefit from several of the drivers below, such as electrification of end uses, efficiency, circularity, digitisation. On the other hand, it also concerns the use of alternative fuels (e.g. synthetic fuels, including hydrogen, synthetic methane, synthetic methanol, and synthetic liquid hydrocarbons, manufactured using green electricity or by processing materials from municipal and agricultural waste into energy), optimisation of logistics (e.g. reducing transport distances for materials and products), changing the typology of the materials used, educating customers in better use of products and services
- **Electrification.** Electrification of end uses is emerging as a key driver in many sectors. There are many industries currently using fossil-fuel energy that could be converted to direct use of renewable green electricity thanks to existing technologies. These include battery electric vehicles (BEVs), heat pumps, direct reduction of ores in metallurgy¹⁹ or the adoption of zero-carbon electricity-powered machinery in the agri-food industry
- **Digitisation** is profoundly changing the way companies conduct many of their daily activities, with an acceleration due to the period of the Covid-19 pandemic. Although not completely free from environmental implications, the digitisation of many activities can contribute to the recovery of efficiency in the use of environmental resources, and it acts as a powerful enabler and accelerator for the sustainability transition. Automation, assisted by Artificial Intelligence (AI) and predictive modelling, including in agriculture (e.g. precision farming) can dramatically increase the ability to reduce GHG emissions, and enhance productivity while reducing costs
- **Efficiency** in the use of energy (**energy efficiency**) and resources (**material efficiency**, i.e. the reduction of waste materials in production processes) is paramount. Initiatives aimed at recovering efficiency in the use of energy, both renewable and non-renewable, and in the use of materials, are increasingly on the agenda for companies, even of smaller dimensions
- **Circularity** is also gaining ground in company priorities, through process and product re-design aimed at improving the use of recycled or regenerated materials (e.g. plastics, metals, wood, paper). Circular economy and recycling can contribute to GHG reduction by reducing the energy used to process new virgin materials (e.g. extraction, processing)

¹⁹. Sustainable Development Solutions Network (SDSN) and Fondazione Eni Enrico Mattei (FEEM) (2019), *Roadmap to 2050 A Manual for Nations to Decarbonize by Mid-Century*

- **Nature-based solutions for carbon sequestration.** Plants, forests, and soil absorb carbon dioxide, making management of forests and land paramount to adhering to the 1.5°C or 2°C pathways. Protection, improved management, and restoration of forests, peatlands, coastal wetlands, and grasslands have the potential to reduce emissions and/or sequester up to 13.1 GtCO₂eq, with agriculture holding the second largest share in terms of mitigation potential, with up to 6.7 GtCO₂eq from cropland and grassland soil carbon management, agroforestry, improved rice cultivation, and livestock and nutrient management²⁰. The primary carbon sequestration measures in these biomes are reforestation, afforestation, deforestation avoidance, and natural forest management. It is also possible to enhance soil carbon through regenerative agricultural practices such as low- and no-till agriculture, cover crops or crop rotation, legumes sown in pastures, and optimised grazing intensity

3. Our research highlights two types of gaps related to transformative drivers for climate change. Awareness gap: transformative drivers are not fully recognised, although in several domains SMEs show a relatively advanced foundation for improvement. Preparedness gap: 1 out of 2 SMEs say that they are not (very or fairly) prepared to address future challenges

Two types of gaps emerge regarding the level of awareness and preparedness of SMEs belonging to the energy-intensive industries and agri-food ecosystems. Although our research focuses on these two ecosystems, for the purpose of comparison we also compared the responses of SMEs in these ecosystems with other industries.

Awareness gap: almost two out of three SMEs are aware of the relevance of issues such as efficient use of energy resources and materials (and, indeed, a number of them have already implemented initiatives in the field of material and energy efficiency, see Chapter 1), digitisation, and electrification. Approximately one in two SMEs is aware of the importance of circularity and decarbonisation.

20. IPCC (2022), *Climate Change 2022: Mitigation of Climate Change*, https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf

nisation, while just over four in ten recognise the importance of nature-based solutions for climate action.

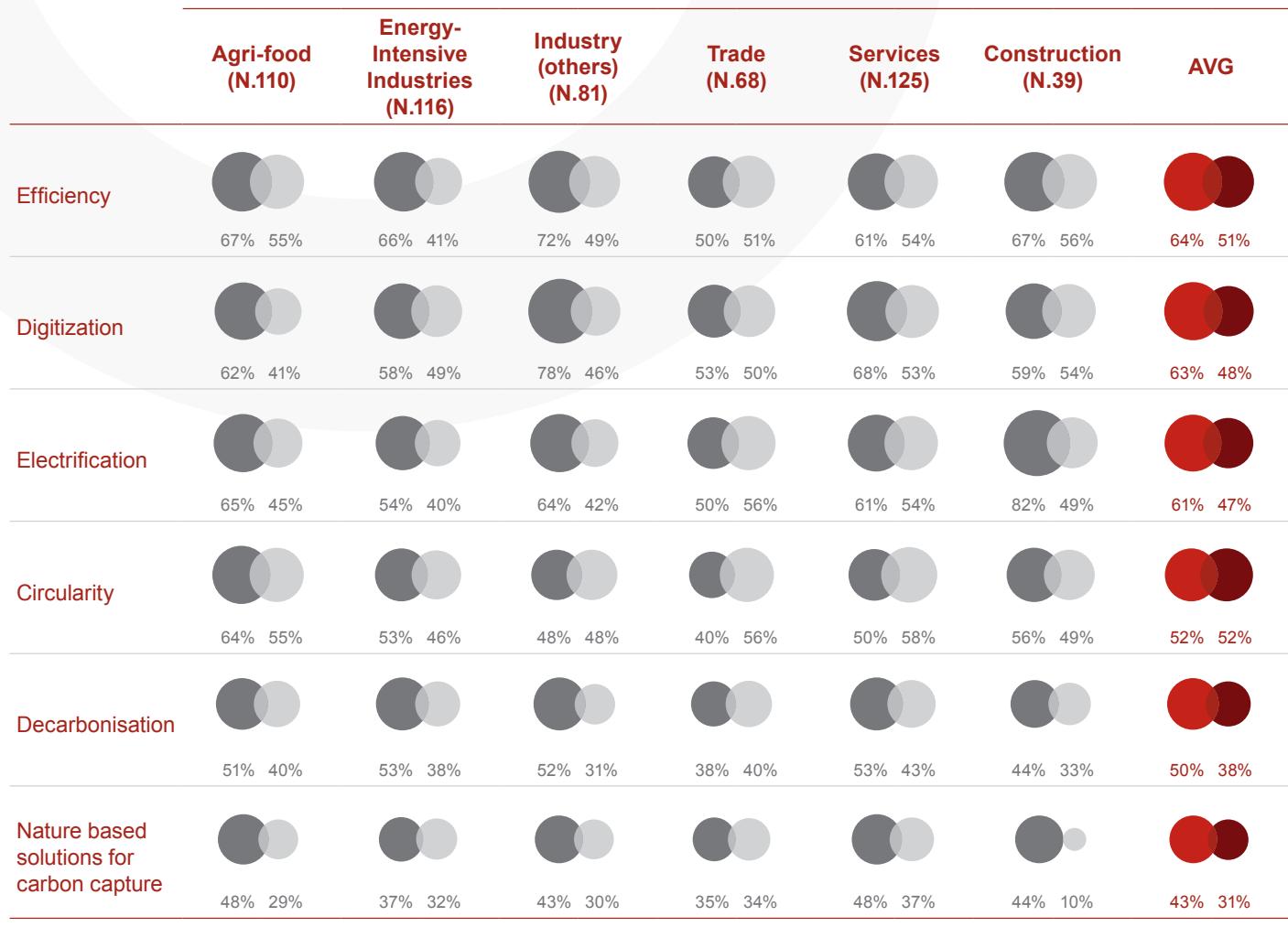
In general, the results show a certain homogeneity among the ecosystems and sectors, with some focusing more on efficiency in the use of materials and energy (Other industries, e.g. Manufacture of computer, electronic and optical products, Manufacture of machinery and electrical equipment, Manufacture of transport equipment, Energy-intensive Industries, and Agri-food ecosystems), and others on digitisation (e.g. Other industries, Services, Agri-food), electrification (with Construction leading the pack) or circularity (Agri-food was the most sensitive in this domain).

Preparedness gap: on the preparedness side, at least one in two SMEs claim to be (very or fairly) prepared to deal with the transformational drivers we identified. Similarly to what has been observed with reference to the level of knowledge, a substantial homogeneity across sectors is also recorded in this respect, showing that in the case of SMEs it is their size, rather than industry or ecosystem, that determines to a greater extent their aptitude or preparedness with respect to transformational dynamics. On closer inspection, the SMEs that claim to be prepared, or fairly prepared, are also those that have, over time, adopted a formalised sustainability strategy and initiatives in the field of environmental efficiency and renewable resources (e.g. installation of photovoltaic panels, electrification, use of energy from green sources, as highlighted in Chapter 1).

Transformative drivers for climate action: all ecosystems and sectors show an awareness and preparedness gap. Awareness gap: transformative drivers are not fully recognised. Preparedness gap: when SMEs recognise the drivers, they often say that they are not prepared to face them.



Perceived importance of transformative drivers (very + fairly) and level of preparedness of SMEs (very + fairly prepared)



% say relevant 

% say prepared 

Total N. 545

Source: SDA Bocconi School of Management Sustainability Lab survey for Generali SME EnterPRIZE (2022)

With reference to the awareness and preparedness related to transformative drivers, our analysis again seems to confirm the polarisation highlighted in the first chapter. The SMEs that have not yet adopted a formalised approach to sustainability are the same ones that present, for the most part, lower awareness of the current and future dynamics and, above all, an insufficient level of preparation to face the challenges of the sustainable transformation.





CHAPTER 5

The sustainability transition of European SMEs is possible

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1. Our analysis shows that the sustainability transition of European SMEs is underway, with a combined 41% of SMEs already having adopted formal sustainability strategies or action plans, or being in the process of adopting them

The sustainable transition of European SMEs is underway, but still needs to be completed.

According to our survey, the number of SMEs embracing a formalised sustainability strategy or plan ("Heroes") has doubled in the last two years. If we also add the SMEs that are in the "transition" process, i.e. have already started the sustainability journey, and will soon complete this process ("Soon-to-be"), a total of 41% of SMEs in the surveyed countries claim to have adopted a sustainability strategy or plan.

To this encouraging fact we must also add that, as already evidenced in many previous studies and literature, SMEs also carry out many initiatives at an informal level, that are not framed within formally defined strategies and action plans. We can therefore say that the sustainability transition of SMEs is underway, with differences in timing in the various countries analysed, with Germany, Italy and Spain appearing to be the most advanced countries on this front.

The motivations that have led to the adoption of a formalised ESG approach include the vision and sense of responsibility of the ownership, but also the increasing demands of national and international regulations, and the search for organisational benefits and a superior competitive advantage.

2. Our analysis also shows a polarisation of the strategic approach to sustainability in European SMEs. Indeed 43% of respondents say they have not adopted an ESG strategy or plan, and have no interest or intention to do so in the future

These companies (“Laggards”) have doubled in number over the last two years, due to a number of reasons and complexities (e.g. the Covid-19 pandemic and recovery, tensions in commodity and energy supply markets, the exponential rise in transportation costs, in addition to international tensions) that add to the traditional barriers to the adoption of a strategic approach by SMEs.

In any case, to the credit of these laggard companies, the analysis shows that even these types of companies have in some cases taken one or more actions in the field of sustainability, whether of an environmental or social nature, albeit in a less formalised manner and to a lesser extent.

The sustainability transition of European SMEs will only be possible if these companies are persuaded to embrace a new, integrated approach to sustainability, characterised by multiyear action planning, the definition of a strategic plan, accompanied by objectives, indicators, and performance targets.

The sustainable transition of European SMEs will only be possible if laggards are persuaded to embrace a new, integrated approach to sustainability.

3. Laggards can be convinced by highlighting the benefits of adopting a sustainability strategy. The business case is clear: at least 50% of SMEs that have adopted this approach have received organisational, reputational, or competitive benefits, with peaks of 90%

Our survey confirms the positive link between sustainability-oriented social and environmental commitments and a wide range of corporate performance benefits, extending beyond the domains of improved environmental performance or employee, owner and management satisfaction, or improved community relations or reputation.

Significant benefits are also achieved in the field of economic and competitive performance, increased operational efficiency, gain in market share or access to new markets, with the development/acquisition/consolidation of competitive advantage.

The benefits of adopting a sustainability strategy can act as a powerful lever to convince laggards to embrace the transition.

4. Beyond these benefits, SMEs are asking for additional support, in terms of promotion of sustainable demand, public incentives, access to sustainable financial instruments, a clear and simplified framework adapted to their size and characteristics, and training and skills development

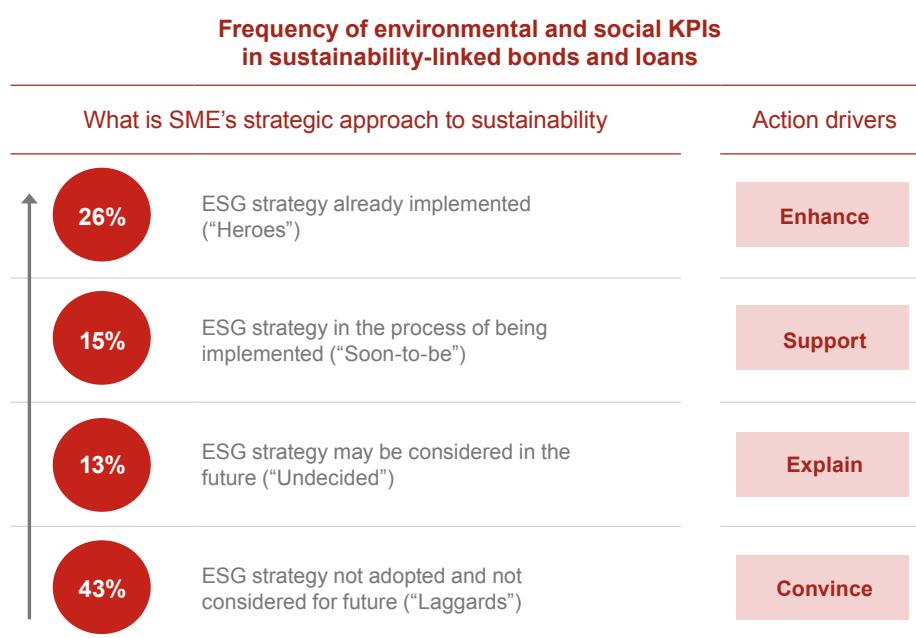
Our research attempted to analyse whether, and in what way, the interventions included in NRRPs provide answers to the demands of SMEs, and whether the financial system is in line with the expectations of European SMEs:

Besides the benefits of the “business case”, SMEs are asking for additional support to embrace and complete the sustainable transition.

- **The analysis of public interventions in the form of NRRPs paints an articulated picture**, with provisions seeking to provide support for sustainable demand and some public incentives, in the form of infrastructural strategic initiatives (e.g. aimed at improving national strategic infrastructures, including clean mobility and transportation facilities), contextual sectoral initiatives (e.g. aimed at directing resources to the modernisation of essential areas of the public and private sectors, such as the improvement of energy efficiency of public and private buildings), and initiatives directly addressed to enterprises, and in particular to SMEs (e.g. through the financing or co-financing of measures aimed at promoting investments in the field of the green transition), although it is too early to make a full judgement since the NRRPs are still being implemented and have not yet been able to fully develop their expected benefits
- **The analysis of sustainable finance also provides an articulated picture**. While, on the one hand, the last few years have seen an exponential growth of instruments (bonds or loans) in some way defined as “sustainable” or “sustainability-linked”, it should be noted that sometimes it is arguable that these instruments possess the characteristics to be labelled as “truly sustainable”. On the other hand, operations with SMEs still show considerable delays, for reasons linked both to the characteristics of these companies (lack of skills, lack of ability to approach the issues in a structured way, and lack of clear, simplified tools or frameworks dedicated to SMEs) and to the financial offering, which still seems to be focused on the needs of larger companies. However, there is no lack of examples of good practices (e.g. public guarantees, tools for coordinating and aggregating SMEs for access to the green mini-bond market in the form of basket bonds) which can, if developed and extended, bring significant results

5. The level of awareness of, and preparation for, transformative drivers related to climate action presents an interesting overall picture, with some gaps in awareness and preparedness

Our analysis on the awareness and preparation for transformative drivers related to climate change in selected ecosystems, extended to the main industrial sectors, shows that about two out of three SMEs have a relatively good understanding of the importance that energy and materials efficiency, digitisation, electrification will play in the near future, while one in two is aware of the importance of moving forward on the path of circularity and decarbonisation. These results are encouraging and should activate all the relevant actors to bring on board the remaining companies that do not yet seem aware of the importance of such changes, overcoming what we have defined as the “awareness gap”. Similar considerations can be made with reference to the level of preparation with respect to transformative drivers. In this case, about one in two SMEs say they are prepared or fairly prepared to face the challenges of the sustainability transition. To complete the picture, it is essential to bring the remainder on board, namely the 50% of companies that still do not feel prepared to face these challenges (“preparation gap”).



6. Four main action drivers (enhance, support, explain, convince) can sustain, consolidate, and develop SMEs' just sustainability transition

To move forward on the journey of the just sustainability transition for SMEs, we have identified four main drivers of action: **enhance, support, explain, convince**:

In order to move forward on the journey of the just sustainability transition for SMEs, we have identified four main drivers of action: enhance, support, explain, convince.

- **Enhance:** sustainability transition is a process, rather than a threshold or a milestone and companies that have embraced the transition ("Heroes") by adopting strategies and action plans, objectives, indicators and targets to be met in the short or medium-long term, must also improve their environmental and social performance. In order to do so, it is paramount that all the relevant actors (e.g. national and international public institutions, business associations, larger companies to which SMEs are suppliers in the value chain, the world of research and academia) provide such companies with positive rewards and deploy mechanisms to recognise the initiatives adopted, including in terms of legislative and regulatory simplification or access to public tenders, and the development of frameworks and tools specifically dedicated to SMEs, especially in the management and reporting domains
- **Support:** "Soon-to-be" companies must be supported in their journey, all the relevant actors must operate in order to support their transition and alleviate the barriers that make a sustainability approach difficult (e.g. excessive bureaucracy and a complex legislative and regulatory framework with respect to the characteristics of these companies, incentives for the development of initiatives, access to financial resources dedicated to the transition)
- **Explain:** in order to bring SMEs that still describe themselves as undecided on board in the sustainability transition, it is paramount that all the actors involved explain, in a clear way, the benefits of the transition and the risks of not adhering to this epochal transformation. The business case highlighted in this white paper can provide material and evidence to demonstrate, through the experience of SMEs, the benefits concretely achieved by similar companies that have embraced this approach
- **Convince:** laggards can be convinced by putting in place, in a combined way, initiatives aimed at explaining the benefits of sustainability transition (and the risks of not adhering to this evolution), in addition to concrete initiatives aimed at demonstrating the elimination of the main barriers to transition, and the implementation of incentive and support mechanisms. Only in this way will it be possible to eliminate the polarisation highlighted by our research and bring all European SMEs to the level necessary to complete the transition

Methodology

A mixed methodology was used. For **Chapter 1**, we carried out a survey using a mixed method CATI-CAWI approach, to guarantee the best coverage. As for the sampling plan, using the latest Eurostat data on enterprises in Europe, a reasoned plan was carried out on a country-by-country basis and representative by macro-sector and class of employees. The analysis conducted in Chapter 1 was also verified at national level with an extensive literature review and compared with data and information from studies, reports and research at a national and international level.

SECTORS	AT	CZ	FR	DE	HU	IT	ES	TOTAL
Agri-food	21	19	23	26	24	21	28	162
Energy-Intensive Industries	21	35	39	29	27	36	38	225
Industry (Others)	15	23	18	21	18	33	19	147
Construction	11	8	17	15	9	11	12	83
Services	35	22	41	45	25	38	41	247
Trade	17	13	22	24	17	21	22	136
TOTAL	120	120	160	160	120	160	160	1000

DIMENSIONS	AT	CZ	FR	DE	HU	IT	ES	TOTAL
10 to 19	64	56	91	88	62	97	84	542
20 to 49	36	38	46	45	37	43	53	298
50 to 249	20	26	23	27	21	20	23	160
TOTAL	120	120	160	160	120	160	160	1000

The analysis conducted in **Chapter 2** was based on an extensive and in-depth review of National Recovery and Resilience Plans, together with a literature review and interviews with informed experts.

The analysis conducted in **Chapter 3** was carried out through access to publicly available sources and databases, referenced in the text. Initiatives taken by main financial players in each country by size (total assets), in both the banking and insurance sectors were analysed. Interviews with experts and representatives of the analysed institutions were conducted.

Chapter 4 was based on the analysis of the survey data and an extensive and thorough review of the existing literature.

In addition, interviews were conducted with representatives of EU institutions.

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