



Financing SMEs for Sustainability

Drivers, Constraints and Policies

OECD SME and Entrepreneurship Papers

Financing SMEs for Sustainability: Drivers, Constraints and Policies

Addressing the climate crisis requires the net zero transition of millions of SMEs globally. SMEs have a significant aggregate environmental footprint and need to adopt cleaner business models. As eco-entrepreneurs and eco-innovators, they also have a key role to play in devising innovative climate solutions. Access to finance is essential for SME investments in net zero, but small businesses face considerable challenges in tapping into the growing pool of sustainable finance. This challenge is likely to grow as financial institutions seek to comply with mandatory environmental reporting requirements. This policy paper examines the sustainable finance landscape for SMEs, the various actors in the ecosystem and the key drivers and barriers affecting the supply of and demand for sustainable finance. It provides an overview of the key policies and instruments in place to support SME access to sustainable finance and identifies considerations for future public support and policy making.

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Glossary of terms

ESG scores are evaluations of the performance of a company, a fund or a security with respect to Environmental, Social and Governance (ESG) issues. The ESG scores, published by ESG rating and index providers, capture all relevant non-financial risks and opportunities of a company's daily operations (Deloitte, 2021^[1]). Risks and opportunities under the "E" pillar encompass climate mitigation and adaptation efforts as well as other nature-related activities such as circular economy, biodiversity conservation, pollution reduction or sustainable land use.

Green finance is any structured financial activity created to ensure a better environmental outcome including products such as green loans, green debts mechanism and green investments. Typically, these instruments encourage investments into projects in renewable energy, pollution prevention, biodiversity conservation, circular economy and sustainable land use (Weforum, 2020^[2]).

Materiality is an accounting principle that relates to the significance of an item in a company's financial statement. According to the U.S. Securities and Exchange Commission, an item is material "if there is a substantial likelihood that a reasonable person would consider it important" (SEC, 1999^[3]). Within the principle of financial materiality, environmental factors are only considered as risk or opportunity for the company's value maximisation. **Double materiality** extends this principle of financial materiality by, not only assessing the influence of external social and environmental factors on the value of the company, but by identifying the company's impact on the economy, society, and the environment.

Net-zero refers to the target of reducing greenhouse gas emissions to zero by balancing the amount released into the atmosphere with the amount removed and stored by carbon sinks. An entity can achieve net zero by reducing carbon emissions and offsetting any emissions that cannot be eliminated.

Non-financial disclosure/reporting is a form of transparency reporting whereby companies formally disclose information not related to their finances, including information on environmental impacts and human rights (National Action Plans on Business and Human Rights, 2017^[4]). For example, non-financial disclosures related to climate include information on carbon emissions. On the one hand, climate related non-disclosure requirements enable companies to demonstrate foresight in their consideration of climate issues. On the other hand, it helps inform investors to efficiently allocate capital towards a lower emissions economy (Ministry for the Environment, New Zealand, 2022^[5]).

Scope of emissions describe the three different levels by which the coverage of climate-related disclosure requirements differs. While Scope 1 and 2 emissions include GHG emissions that the company is directly responsible for (1) or indirectly produces through energy consumption (2), Scope 3 emissions encompasses all other emissions that are outside of the company's control. The hard-to-measure scope 3 emissions stem from upstream activities such as commuting of employees or purchases goods as well as from downstream activities such as treatment of waste or operations of franchises.

Sustainable finance is an *evolution of green finance*, as it incorporates environmental, social and governance (ESG) issues with the aim of spurring long-term investments in sustainable economic activities (European Parliamentary Research Service, 2021^[6]). Environmentally sustainable finance instruments link financing conditions to environmental performance, regardless of whether the finance product involves explicit greening activities.

Executive summary

The urgency of addressing climate change continues to grow and is recognised as a priority for governments and businesses in many countries around the world. Tackling the climate crisis calls for the green and net zero transition of millions of SMEs. SMEs have a significant aggregate environmental footprint (at least 50% of the greenhouse gas (GHG) emissions of business sector) and need to adopt cleaner business models. As eco-entrepreneurs and eco-innovators, SMEs also have a critical role to play in devising innovative climate solutions.

In recent years, the supply of sustainable finance has been growing rapidly, in response to wider demand for sustainable products and for greater transparency and accountability of financial institutions (FIs) and large enterprises with respect to their environmental and social performance. Investors are seeking to ensure that their financing is going towards investments that are aligned with better environmental and social outcomes. Regulators, too, are demanding greater transparency on the non-financial performance of FI operations and investments, mainly through the ongoing introduction of non-financial disclosure requirements. Meanwhile, policy makers, including those focusing on SMEs, are seeking to incentivise more private lending for sustainability purposes through financial incentives, guarantees, and other instruments. Reputational considerations and the new product and market opportunities afforded by the green and net zero transition are also important drivers for FIs and large enterprises to provide sustainable finance to SMEs.

The drivers for SME greening are growing, too, as SME participation in value chains, access to finance and competitiveness increasingly depend on businesses' ability to measure, report on and improve their sustainability performance. This largely reflects spill-over effects from the emerging regulatory requirements on FIs and large enterprises mentioned above. Although SMEs will generally not be subject to mandatory reporting in the coming years, many of them will be affected indirectly: i) via their participation in value chains of large enterprises which have to report on the sustainability performance of their entire value chain; and ii) via financing by FIs that have to report on the environmental performance of their financed portfolios.

However, the business case for investments in sustainability is not always apparent to SMEs, since these investments often entail high up-front costs with uncertain returns over the long term, due to evolving market demand, regulatory changes and technological advancements. SMEs also often lack knowledge of the steps needed to achieve net zero, as well as of the available financing options.

SMEs also face challenges in tapping into the growing pool of sustainable finance. They have to navigate a complex ecosystem with a growing number of actors, including public and private financial institutions, policy makers, regulators, Fintech companies, ESG rating providers, consulting service providers, auditors, accounts and others. Furthermore, as financial institutions seek to comply with mandatory environmental reporting requirements, SMEs risk losing out on sustainability-linked finance due to their limited capacity to produce data on their sustainability performance, including ESG assessments.

There is a growing range of sustainable finance instruments being developed by public and private actors. Some are used to finance green projects, while other ESG-linked instruments tie financing conditions to the sustainability performance of the investment or investee. Financial institutions can deploy these instruments directly or through intermediaries, including other financial institutions (e.g. commercial banks, venture capital funds, etc.) or non-financial actors (e.g. energy providers). Likewise, large multinational enterprises play an increasing role in providing finance to support their suppliers' greening efforts.

Governments have an important role to play in crowding in private sector financing for SMEs' green transition, through the provision of credit guarantees for green or sustainability-linked lending, and by supporting the provision of equity finance for innovative green ventures through intermediaries and partnerships. They also support SME participation in green capital markets and provide financial incentives for SME greening, such as subsidies and tax incentives.

Public institutions also play an important role in providing non-financial support for SME greening, which can in turn stimulate demand for green finance and investment. This includes support for measuring, reporting and reducing their environmental footprint, through the provision of online tools, mentorship and consulting services, as well as access to data and information to help SMEs make more informed decisions and establish timelines for greening.

Looking ahead, policy makers and other public actors will need to continue to strengthen the SME sustainable finance ecosystem and expand the scope and reach of their SME support in order to accelerate SMEs' transition to net zero. There are a number of important considerations for policy makers, including the need to:

- Provide financial support to address challenges impeding SME access to sustainable finance;
- Provide non-financial support to bridge knowledge and awareness gaps among SMEs;
- Understand better the various populations of entrepreneurs and small businesses and their sustainable finance needs, depending on their location, key activity, and other considerations, in order to better tailor financing instruments;
- Consider exercising proportionality when developing non-financial disclosure requirements for SMEs and provide targeted support to help SMEs comply with these requirements;
- Strengthen the transparency and interoperability of sustainability-related data, definitions, standards and methodologies within jurisdictions and across the multilateral system as appropriate;
- Engage in international co-operation and initiatives to foster knowledge sharing, policy dialogue and collaboration on the topic of sustainable finance for SMEs, such as the OECD Platform on Financing SMEs for Sustainability.

The OECD will continue to address these issues through analytical work and data collection on specific aspects of sustainable finance, including through the OECD Platform on Financing SMEs for Sustainability, as well as work on SME greening and green entrepreneurship.

Introduction

What is sustainable finance?

Sustainable finance incorporates environmental, social and governance (ESG) factors in investment decisions. This means that beyond the traditional considerations of maximising shareholder and debt-holder value through financial returns, sustainable finance also reflects sustainability-related factors, including the impact on the environment and society more broadly. Environmental considerations (“E” pillar) can include climate change mitigation and adaptation, as well as other environment and nature-related factors such as pollution reduction, biodiversity preservation and the circular economy (European Commission, 2021^[7]). Social considerations (“S” pillar) can include human rights and community relations, customer privacy, data security, product quality and safety, selling practices and product labelling, considerations related to the just transition, etc. Governance considerations (“G” pillar) include factors such as business ethics, competitive behaviour, the management of the legal and regulatory environment, risk management, etc. (OECD, 2020^[8]).

This report focuses on the environmental pillar as a starting point for exploring sustainable finance for SMEs. Environmentally sustainable finance encompasses investments that incorporate environmental considerations in the decision-making process. Any instrument whose financing conditions are linked to environmental criteria or performance, regardless of whether it is spent on a greening activity, is considered a sustainable finance instrument. Environmentally sustainable finance is, therefore, broader than green finance, which is limited to the capital intended for green investments (OECD, 2018^[9]).

The report focuses in particular on sustainable finance that supports the transition to net zero. Besides carbon sequestration and climate regulation, environmental considerations can range from natural capital and biodiversity to air, soil and water pollution as well as waste. And while many of the SME-oriented policies, financing instruments and non-financial support may incorporate a wider range of environmental considerations, this report focuses on the perspective of their climate impact and contribution to the net zero transition.

SMEs’ net zero transition depends strongly on the availability and accessibility of green finance over the near and long term. Whether they are eco-adopters, eco-entrepreneurs or eco-innovators, SMEs and entrepreneurs rely on green financing facilities to invest in greening, improve the environmental performance of their operations, or to develop and market clean products and services.

However, SMEs’ access to sustainable finance has even broader implications. Capital allocation and investment decisions depend increasingly on the consideration of sustainability factors as financial institutions seek to align their portfolios with net zero in response to climate-related risks, incentives, and opportunities (see Chapter 2). In this context, in order to tap into the growing pool of sustainable finance, SMEs must strengthen their capacity to measure and report on their environmental performance and efforts, as well as devise and act upon credible, science-based targets and strategies for achieving net zero.

For these reasons, this report focuses on the broader concept of environmentally sustainable finance (referred to in the report as sustainable finance), along with green finance. It begins with an overview of where SMEs stand in the net zero transition. It explores the role that sustainable finance can play in enabling them to undertake sustainable investments, along with the challenges and opportunities they face

in the rapidly evolving sustainable finance landscape. The report concludes by drawing policy implications and raising questions for future analytical work on this topic.

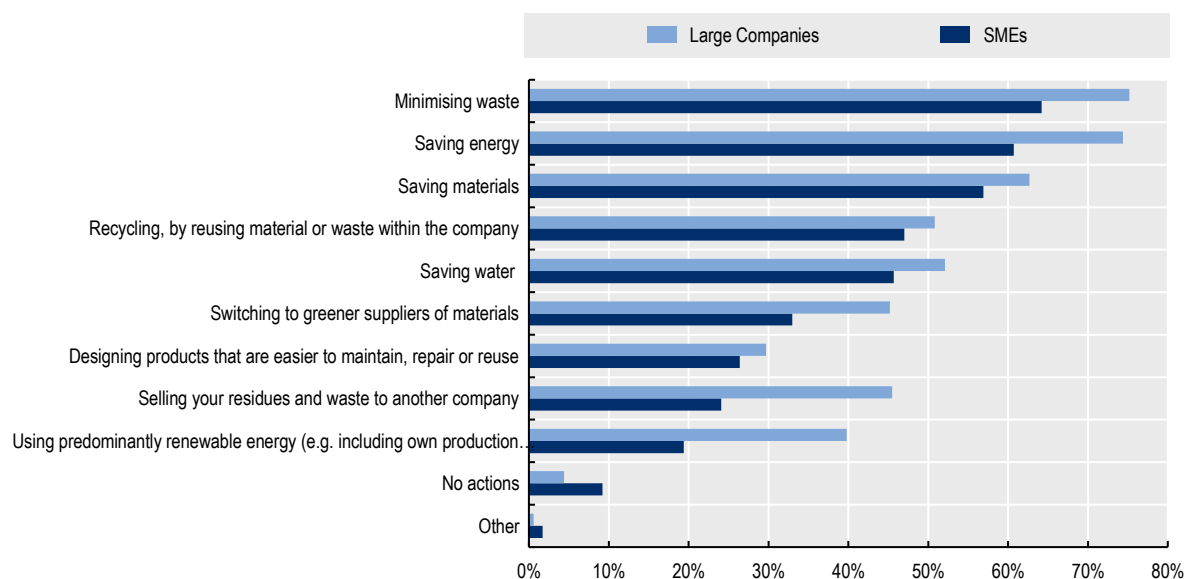
Where are SMEs on their net zero journey?

Since 2018, governments around the world have been stepping up commitments and increasing efforts to reduce carbon emissions, in response to the Intergovernmental Panel on Climate Change's (IPCC) warning that global warming cannot exceed 1.5°C relative to pre-industrial levels if the catastrophic impacts of climate change are to be avoided. There is now a broad consensus that climate action will require comprehensive reforms and transformation across all areas of economic activity, from production and consumption, to financing and investment, trade, etc. Public and private actors alike will have to transition to net zero to achieve the goals of the Paris Agreement.

Small and medium sized enterprises (SMEs) must be an integral part of this economic and social transformation, as drivers and adopters of the solutions to the climate crisis. In OECD countries, SMEs account for over 99% of businesses, 59% of value added of the business sector and 68% of employment on average (OECD, 2021^[10]). They are also integral part of global value chains in OECD and developing countries, which account for an estimated 70% of global trade in goods (OECD, 2022^[11]). And while their individual environmental footprint is relatively small, SMEs on aggregate account for a significant share of environmental pollution and greenhouse gas (GHG) emissions globally (at least 50% of GHG emissions of the business sector and 30-60% of energy use of the business sector). Moreover, SMEs also contribute to the net zero transition through the role they play in designing and implementing solutions to the climate crisis as eco-innovators and entrepreneurs as well as adopters and diffusers of these innovations in their supply chains. In Finland and the United Kingdom, for example, SMEs account for an estimated 70% and 90% of clean tech companies respectively (ETLA, 2015^[12]) (Carbon Trust, 2013^[13]).

Most SMEs are at the early stages of their journey to net zero, having taken only basic actions to reduce the carbon footprint from their operations. According to a 2021 global survey conducted by the SME Climate Hub, most enterprises (82%) recognise that the green transition is a high priority, but they have only taken elementary steps toward greening their business models, such as the introduction of energy efficiency measures and waste reduction (82%), employee education (64%), and upgrades to facilities and equipment (52%). Also, only 60% of enterprises had a long-term emission reduction plan in place (SME Climate Hub, 2021^[14]). In a survey of more than 300 SME CEOs, 69% confirm having included sustainability in their mission statement, but only 51% have integrated sustainability considerations in their business strategy; 41% have dedicated staff for sustainability; and only 21% link executives' compensation with companies' sustainability performance. Country-specific surveys in Canada (2021) and the United Kingdom (2021) find similar outcomes: comparatively few enterprises have undertaken actions to reduce upstream and downstream supply chain emissions. Likewise, few have implemented complex interventions such as the redesign of production or service processes in line with net zero emissions or the employment of external environmental auditing (British Business Bank, 2021^[15]) (Business Development Bank of Canada, 2021^[16]). Moreover, SMEs lag behind large enterprises across many key areas of engagement.

Figure 1. Environmental actions by firm size



Note: Sample covers 14 215 firms in European Union Member States. The survey was conducted between November and December 2021.
Source: (European Commission, 2021^[17])

In order to reach net zero, SMEs need to eliminate or significantly reduce the emissions not only from their own operations (so-called Scope 1 and 2 emissions), but also upstream or downstream emissions from their entire value chain (Scope 3 emissions) and offset emissions that cannot be eliminated (Box 1). In order to do so, SMEs need to be able to identify and measure the sources of their emissions, devise long-term decarbonisation plans and take the necessary actions and investments to change their business models accordingly. This process is complex and resource-consuming for all enterprises, but particularly for SMEs which have more limited financial and non-financial resources (staff, skills, etc.) to devote to this purpose.

The role of sustainable finance in SME greening

Numerous surveys have shown that access to finance is one of the most important constraints for SMEs seeking to undertake green investments, and this challenge is much more pronounced for SMEs compared to large enterprises. SMEs often cite the high upfront costs and limited access to finance as the main constraints to greening (e.g. 44% of SMEs in France, and 32% in Spain and Romania find this as the main challenge to taking resource efficiency actions) (European Commission, 2018^[19]), and those that do undertake green investments rely strongly on internal financial resources. In the EU, for example, 60% of SMEs that have undertaken resource efficiency investments and 61% of SMEs that offer green products or services have relied on their own funds (European Commission, 2018^[19]).

On the other hand, SMEs also face knowledge- and capacity-related challenges that limit their demand for net zero investments and sustainable finance (OECD, 2021^[20]). A 2021 survey conducted by the UK Chamber of Commerce shows that only one in ten SMEs currently measure their GHG emissions (one in 20 for microenterprises). Moreover, 22% of SMEs do not fully understand the term 'net zero,' and almost a third have yet to seek advice or information to help them develop a net zero roadmap or improve their environmental performance (British Chambers of Commerce, 2021^[21]). Similarly, survey data from Korea show that 31% of SMEs find the lack of information on the methods to reduce their carbon footprint to be a main constraint to achieving net zero, and another 22% do not consider it a high priority (Korea Chamber of Commerce and Industry, 2021^[22]).

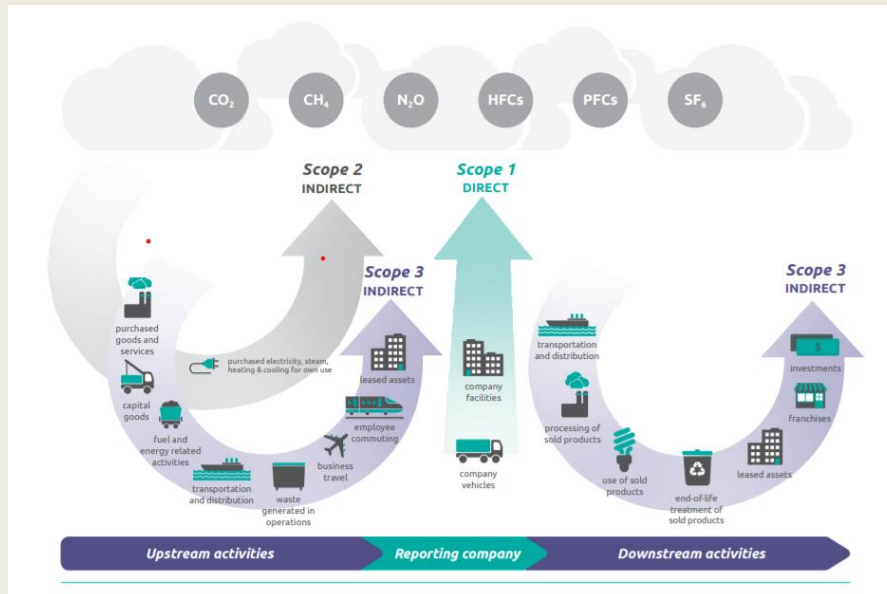
Box 1. Tracking GHG emissions

GHG emissions can be classified under three “scopes” depending on the source.

Scope 1: The greenhouse gas emissions from sources the SME owns and controls and is therefore directly responsible for

Scope 2: The emissions the SME indirectly produces through the energy or electricity it purchases

Scope 3: All other emissions the SME is indirectly responsible for from sources outside their direct control



Scope 1 and 2 emissions include, for example, the combustion of fossil fuels from enterprise facilities, enterprise vehicle emissions, emissions associated with the production of electricity used by the enterprise, etc.

Scope 3 emissions, comprise emissions from the entire value chain and include those from: goods and services purchased; extraction, production and transportation of fuels and energy purchased; upstream and downstream transportation and distribution; disposal and treatment of waste once it leaves the enterprise; business travel in vehicles not owned by the enterprise (e.g. public transport, air travel, etc.); commuting of employees in their own vehicles or public transport, downstream processing, use and end-of life treatment of the enterprise’s product; and operation of any franchises or other investments that the enterprise finances, etc. For financial institutions, Scope 3 emissions include all the emissions stemming from the assets. As a result of their larger scope and the need for considerable data from external sources, Scope 3 emissions are more challenging to measure and report on.

Reaching net zero means that SMEs have to significantly reduce or eliminate Scope 1, 2 and 3 emissions, and offset any emissions that they cannot remove.

Source: GHG Protocol (Greenhouse Gas Protocol, 2022^[18])

Boosting SME demand for green investment and finance is therefore critical for accelerating SMEs’ net zero transition. Sustainable finance for SMEs can unlock significant investments in climate-aligned products, processes and technologies and contribute to the broader structural transformation of economies in line with net zero. When financing instruments are accompanied with well-targeted incentives and non-

financial support, they can also stimulate SME demand for net zero investments. If adequately aligned with climate impacts, data on sustainable finance for SMEs can constitute an additional quantitative metric for measuring SMEs' progress in the green transition.

Objectives

This report sheds light and builds the evidence base on the topic of sustainable finance for SMEs. By providing an overview of the state of play of sustainable finance for SMEs, as well as the key drivers and constraints, the report establishes a baseline for assessing the global effort to boost financing for an accelerated green transition of SMEs. It also highlights SME-specific considerations in sustainable finance and ESG integration and reporting. It explores policies aimed at mobilising financing for SME investments in sustainability, and identifies key policy implications, along with issues for further research.

This work contributes to several work streams within the Committee on SMEs and Entrepreneurship (CSMEE) work programme. It is part of the work stream on SME finance, whose overarching objectives are to build the evidence base and foster SME access to a diverse range of financing instruments. In particular, it seeks to strengthen understanding of the financial instruments that SMEs can use to green their business models and invest in eco-innovation, as well as the various policies and instruments that public institutions can use to mobilise sustainable finance for SMEs. It supports the work of the OECD Platform on Financing SMEs for Sustainability, which has also contributed to the report. It links with the *Financing SMEs and Entrepreneurs Scoreboard*, which could feature its findings, and where new sustainable finance related indicators may be added in due course. It also fed into the 2022 Updated G20/OECD High-Level Principles on SME Financing, which contain a new principle on enhancing sustainable finance for SMEs. The Updated Principles were approved by the CSMEE in June 2022. They were welcomed by G20 Finance Ministers and Central Bank Governors in July 2022 and by G20 Leaders in November 2022.

The work also contributes to the CSMEE work on SME greening, by deepening the understanding of how SME demand for and access to sustainable finance affects their progress in the green transition. It links closely with the project on “Enabling the greening of SMEs and fostering green entrepreneurship”, building on the 2021 CSMEE report “No Net Zero without SMEs: Exploring the key issues for greening SMEs and green entrepreneurship” (OECD, 2021_[20]). It supports the implementation of the recently launched OECD Recommendation on SME and Entrepreneurship Policy, in particular the dedicated principles related to finance and the green transition. It complements the development of a dashboard of greening SME indicators and of analytical work on green entrepreneurship.

This work adds to the OECD body of work in this area more broadly, including the OECD Green Growth Strategy, the work of the Centre for Green Finance and Investment and the work developed by the Directorate for Financial and Enterprise Affairs related to ESG investing and Responsible Business Conduct in SMEs. It also complements the work on Climate Change and Corporate Governance and can inform the ongoing review of the G20/OECD Principles of Corporate Governance.

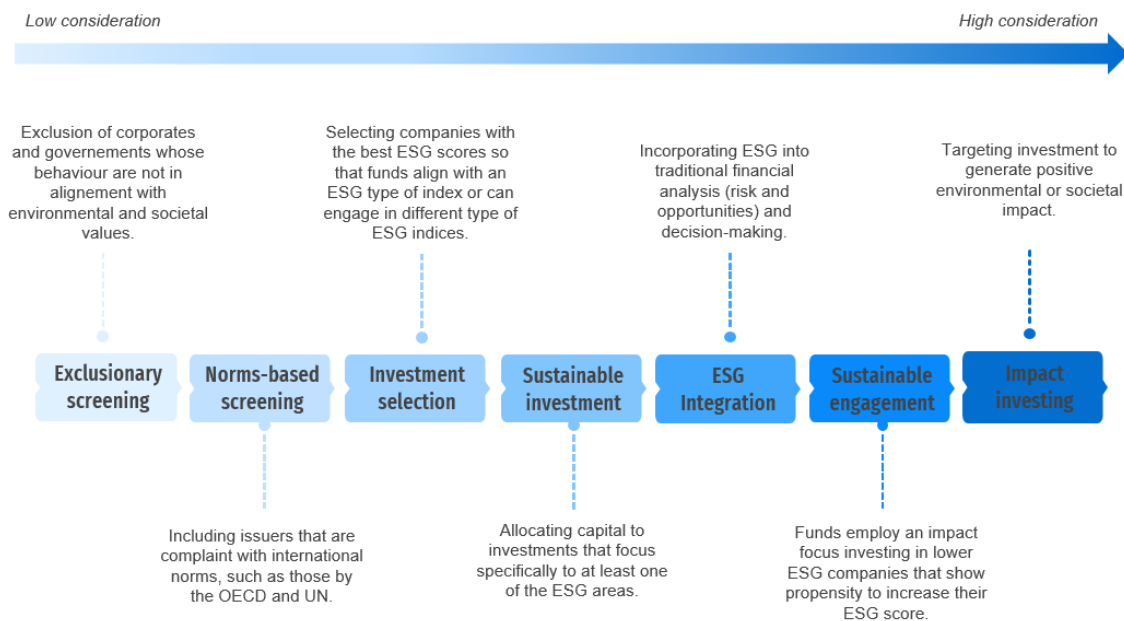
This report provides a spotlight on how the rapidly evolving sustainable finance landscape is affecting SMEs and their transition to net zero. It is divided into five chapters. Chapter 1 provides an overview of the key actors and instruments within the ecosystem for SME sustainable finance. Chapter 2 looks at the drivers for the supply of and demand for sustainable finance for SMEs. Chapter 3 outlines the constraints to the demand and provision of sustainable finance for SMEs. Chapter 4 provides an overview of key policies and instruments that can be utilised to support SME access to sustainable finance. Chapter 5 presents key considerations for policy makers and regulators and explores topics for potential future analytical work.

1 Understanding the sustainable finance landscape for SMEs

The sustainable finance landscape is wide, and increasingly dominated by ESG integration

Environmentally sustainable finance incorporates environmental factors in investment decisions. The way in which these considerations are taken into account varies considerably, depending on the level of proactivity in considering non-financial performance. On the low end of the spectrum are strategies with a less proactive approach, such as exclusionary screening, which focuses on screening out of investments in specific industries or activities (e.g. extraction of fossil fuels, agricultural activities associated with deforestation). In the middle lies the most mainstream strategy, ESG integration, which considers environmental (as well as social and governance impacts) as factors of risk and opportunity in the investment strategy, alongside maximising financial returns. The mid-spectrum also includes the active engagement approach, which targets companies with high emissions but a strong propensity for improvement in their ESG performance. On the high end of the spectrum is impact investing, which pursues or seeks to maximise environmental and social returns, even if they come at the expense of financial returns (Figure 1.1).

Figure 1.1. Sustainable investment strategies by level of consideration of non-financial performance factors



Sources: (OECD, 2020^[23]) (Eurosif, 2016^[24]) (Busch, Bauer and Orlitzky, 2016^[25])

Financial institutions (FIs) can rely on a combination of the aforementioned approaches to achieve net zero. They can seek to reduce the emissions exposure of their portfolios (so-called financed emissions) by allocating more financing toward greening projects (e.g. renewable energy, green infrastructure, carbon removal), whilst reducing exposure to high-emitting sectors or financing their green transition, given the high associated physical and transitional risks (see more in Chapter 2). They can seek to align their portfolios to net zero, which relies on assessing the relative level of alignment of portfolio constituents against net-zero goals. This strategy thus enables continued investment in high emitting sectors to support their green transition; it simultaneously supports the objectives of a just transition, to avoid a sharp exit from carbon-intensive sectors which might leave behind many SMEs as potentially “un-investible”. Lastly, FIs can also seek to finance climate solutions, thus providing the real economy with the products, technologies and services that can enable their green transition. These strategies can support different approaches to net zero alignment as outlined in Box 1.1.

Box 1.1. Financial institution approaches to the transition to net zero and climate objectives

The Science Based Targets initiative (the SBTi) is a collaboration between CDP, the United Nations Global Compact, World Resources Institute and the World Wide Fund for Nature. The goal of this initiative is to drive ambitious climate action in the private sector by enabling organisations to set science-based emissions reduction targets. Since 2015 more than 1,000 companies have joined the initiative to set a science-based climate target.

According to the SBTi, there are a number of strategies financial institutions can employ to reach net zero that are also consistent with the 1.5°C goal of the Paris Agreement.

1. Reducing Portfolio Emissions Exposure: This strategy involves the reduction of portfolio emissions by shifting the portfolio towards lower emitting sectors or companies, This shift is often the result of adopting exclusion and divestment strategies to gradually reduce exposure to GHGs.
2. Increasing Portfolio alignment: net-zero claims are based on FIs aligning all relevant financing activities such that each individual asset achieves a state of net-zero consistent with the SBTi Corporate Net-Zero Standard. Portfolio alignment also alleviates some inherent risks in the first strategy of reducing portfolio emissions exposure, as it can ensure companies that need to decarbonize and have signalled their commitment to do so, receive the financing they need without being constrained by their current emissions profile.
3. Contribution to the net-zero economy: net-zero claims are based on FIs both financing decarbonisation activities and explicitly reallocating financing activities to increase availability of climate solutions (e.g. help financing GHG removal technologies) at a rate consistent with global climate goals.

The SBTi methodologies acknowledge the challenge that financial institutions face in obtaining data on SMEs’ net zero performance, and thus currently allow for most SME investment to be classified as “not applicable.” This further underscores the importance of understanding better the SME-related data gaps and how to address them.

Source: (Science based targets, 2021^[26])

ESG integration is the most mainstream form of sustainable investment, providing a framework for how environmental sustainability can be incorporated into finance and investment decisions both among financial institutions and institutional investors. Under the “E-pillar” of ESG integration, environmental considerations are taken into account with the objective of addressing physical and transition risks, as well as opportunities related to climate change and other environmental factors. Notably, unlike corporate social

responsibility, where sustainability efforts are seen as a guiding principle for ethical corporate management (OECD, 2001^[27]), ESG links environmental and other sustainability criteria with firm performance, focusing on the so-called “material factors” that are likely to impact the financial or operating performance of the enterprise (see Chapter 3). This effectively includes accounting for climate-related risks and vulnerabilities (physical damage, policy and market-related risks, etc.), as well as opportunities afforded by the green transition (clean-tech, renewable energy, green buildings, etc.).

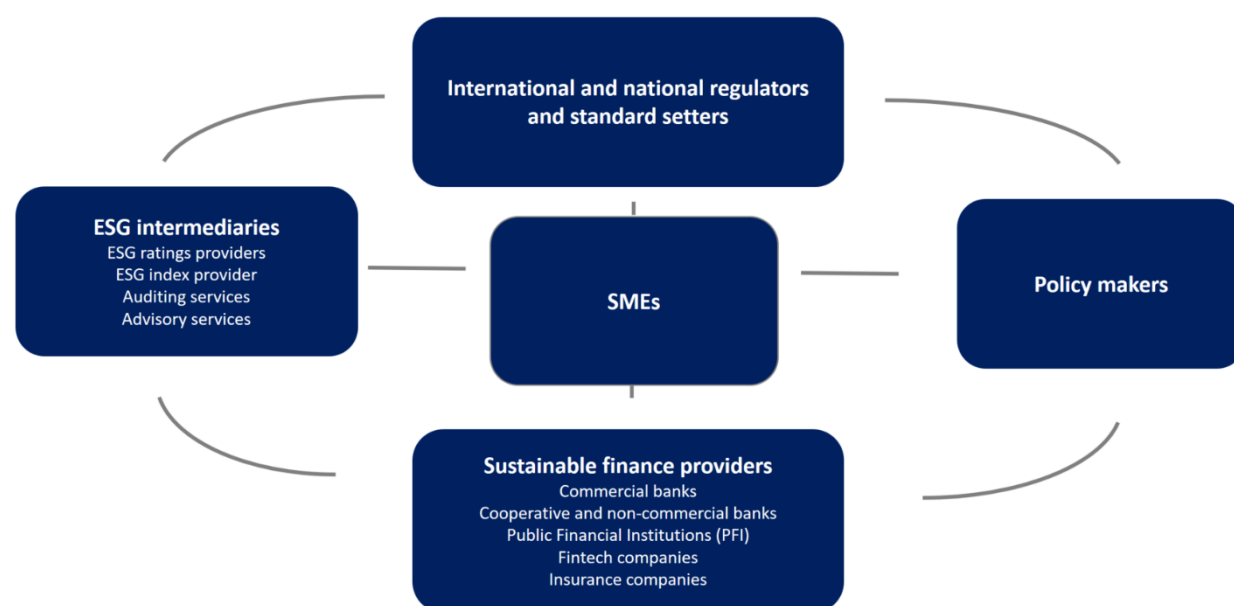
ESG integration has grown rapidly over the past decade, driven by heightened investor scrutiny and demand for sustainable investment. Just a few years ago, only a minority of investors considered sustainability-related factors; yet by 2021, around two-thirds were (EY, 2021^[28]). ESG investing now accounts for an estimated USD 40 trillion in assets under management. This figure is projected to rise to over 50 trillion in 2025, to represent over a third in total global assets under management at that time (Bloomberg, 2021^[29]).

Moreover, the number of financial institutions committed to integrating sustainability factors into their investment and risk management decisions has been increasing. The number of signatories to the UN Principles of Responsible Investments (UN PRI) is expanding rapidly and amounted to 3830 signatories in 2021 (UN PRI, 2021^[30]). Financial institutions are also increasingly developing strategies to strengthen the sustainability of their investments to achieve net zero, as well as the human and financial resources dedicated to these objectives.

The SME sustainable finance ecosystem consists of a wide landscape of actors

The growth in sustainable finance has been accompanied by the proliferation of supporting institutions, instruments and practices. As a result, the sustainable finance ecosystem now includes a wide range of actors, including financing providers (public and private banks, Fintech companies, venture capital funds, etc.), regulators, standard setters, ESG intermediaries, auditing institutions and others. Some of these actors, such as ESG ratings and index providers, have played a minor role in the SME financing landscape up to now due to their relatively limited coverage of SMEs, but they can be expected to be increasingly important as ESG integration becomes more mainstream (see Chapters 3 and 4).

Figure 1.2. The SME sustainable finance ecosystem



Source: Authors.

Private banks

Private banks continue to be the main providers of SME debt finance. Currently banks are also key providers of green financing for SMEs (i.e. financing aimed at green investments) and are likely to continue to play a critical role in boosting SME access to sustainable and green finance going forward.

Commercial banks are increasingly moving toward ESG integration and expansion of their green finance investments in response to broader stakeholder demands (e.g. regulators, investors). They are increasingly establishing sustainable banking teams and implementing ESG strategies to scale sustainable lending including to SMEs. Furthermore, some large commercial banks are also acquiring ESG providers or small-scale ESG-oriented Fintech companies in order to internalise the relevant knowledge and practices related to financing SMEs for sustainability.

Cooperative banks are important drivers of green and sustainable financing for SMEs (Box 1.2). These banks tend to lend more and at a lower cost to SMEs compared to large domestic banks or foreign-owned banks. They also tend to have more local presence than commercial banks. They often provide more long-term lending compared to commercial banks and tend to be more stable and less affected by external economic shocks. This makes them well positioned to meet SME green financing needs, given the long time horizon of green projects as well as their capital-intensive nature (Thomä et al., 2015^[31]).

Box 1.2. Cooperative banks play a key role in financing SMEs for sustainability in many countries

The European Association of Cooperative Banks (EACB), is an early endorser of the UNEP FI Principle for Responsible Banking (PRB), and as of 2020, 14 cooperative banks were also PRB signatories. By integrating sustainability into their strategic processes, these banks have taken a number of actions to mitigate the environmental footprint of SMEs.

Some EACB members (e.g. Group BPCE in France, OP Financial Group in Finland, Rabobank in the Netherlands) have included ESG analysis as part of the assessment of corporate customers' creditworthiness, while others (e.g. Raiffeisen in Switzerland, Crédit Mutuel in France) have provided environmental incentives to climate change adaptation tailoring products to specific geographic contexts and needs (European Association of Cooperative Banks, 2020^[32]).

Other EACB members (e.g. Crédit Agricole in France, the DZ Bank in Germany, OP Financial Group in Finland, Rabobank in the Netherlands, and Raiffeisen in Luxembourg) are issuers of Green Bonds to further foster finance to SMEs with sustainable business models (European Association of Cooperative Banks, 2020^[32]).

In Japan, the Shinkin Central Bank, the Central Bank of all cooperative banks, is increasingly promoting ESG-related finance, providing an estimated JPY 70 to 80 billion in investments and loans only in 2020. The bank also manages climate related risks in its portfolio through the development of "Guidelines for Making Responsible Investments and Loans by type of Business" also in 2020 (Shinkin Central Bank, 2020^[33]).

Public Financial Institutions (PFIs)

Public Financial Institutions (PFIs) have a pivotal role in enhancing SMEs' access to sustainable finance. They not only have an extensive relationship with SMEs and with private banks, but they also mobilise private capital and capital market activities in line with their objectives to mitigate market failures and enhance access to finance for SMEs (ADB-OECD, 2014^[34]). PFIs often have explicit mandates to provide

funding to SMEs: they can engage in direct lending or provide guarantees, equity, hybrid instruments and grants specifically dedicated to SMEs (OECD, 2020^[35]). PFIs also play a critical role in providing non-financial support for SMEs to bridge the knowledge, awareness and capacity-related gaps that SMEs face with respect to sustainable investment and the transition to net zero (see Chapter 4). They can also help SMEs to build their capacities to meet future reporting requirements and tap into the growing pool of sustainable financing (see Chapter 3). One of the key impact channels of PFIs is the positive influence they can exert on partner financial institutions: if private FIs have to meet certain environmental requirements in order to work with PFIs, they are encouraged to integrate sustainability better and faster across the products they offer to SMEs and within their wider investment strategies.

As PFIs are often responsible for translating government objectives into implementation on the ground, they are increasingly incorporating sustainability goals into their mandates or creating divisions focused on SME sustainability. For example, in 2021 the British Business Bank (BBB) placed the transition to net-zero at the core of its mission (BBB, 2021^[36]). PFIs are also increasingly supporting and following the progress of companies with sustainable business models, or that produce innovative green products such as clean-tech. For example, in 2017-18 the Business Development Bank of Canada (BDC) and Export Development Canada provided CAD 1.4 billion in growth capital and project finance to clean-tech entrepreneurs. (BDC, 2018^[37]). Similarly, the BBB is actively investing in green technology companies in collaboration with the private sector through public-private funds: the Bank's programmes have supported £251m in clean tech investment between Q4 2014 and Q2 2021 (BBB, 2022^[38]). The Industrial Bank of Korea (IBK) has expanded the supply of sustainability-linked loans, green investments, and ESG bonds including social bonds. IBK plans to initiate the issuance of its first green bonds in 2022 (IBK, 2022^[39]).

At the European level, the European Investment Bank Group (EIB and EIF) – as the EU Climate Bank - is an important partner in the European Green Deal, playing a leading role in the implementation of the Paris Agreement and the Sustainable Development Goals. The EIB Group Climate Bank Roadmap 2021-2025 guides the climate ambition of the Group.

Fintech

Fintech companies have gradually seen a market opportunity in innovations that can mobilise sustainable finance for SMEs or facilitate SMEs' access to sustainable finance. Green Fintech solutions include digital and payment accounts solutions that can enable SMEs to measure their environmental footprint, as well as data and analytics solutions that can enable SMEs to get ESG ratings. They can also provide investment, asset and crowdfunding solutions through online platforms that increase the pool of available financing for sustainability-oriented projects (Box 1.3). In recent years, the number of platforms with the specific objective to promote environmental causes has increased significantly. For instance, the United Kingdom is becoming an important hub for green crowdfunding, with platforms seeing an expansion in green investing, such as through crowd bonds to fund local green projects (Peer2Peer, 2020^[40]). Similarly in Germany, sustainable crowdfunding platforms, such as Bettervest, that finance projects which are environmentally and socially sustainable are rising (Bettervest, 2022^[41]). In Italy, crowdfunding platforms run competitions where the platform donates 25% for a green project and 75% is crowdfunded (McDaniels and Robins, 2017^[42]).

Box 1.3. Green Fintech offers diverse solutions to enterprises and investors

The rapidly growing green Fintech sector is a source of diverse innovative solutions for SMEs and investors. These include:

Green digital and payment account solutions integrate green features into the payment experience, including carbon, plastic or water footprint accounting based on transactions data or automated offsetting of green externalities.

Green digital investment solutions provide automated investment solutions such as retail algorithmic trading focused on green assets, automated green investment advice, portfolio allocations and risk assessment based on green criteria

Digital ESG data and analytics solutions enable the collection of data and analytics related to ESG ratings, digital green indexing, etc.

Green digital crowdfunding and syndication platforms facilitate the raising of green equity, loans and donations from a large number of individuals or institutional investors.

Green digital risk analysis and insuretech provide solutions to minimise the risks related to climate change or other natural disasters, including automated risk evaluation and monitoring tools, digital green insurance, dynamic pricing and underwriting of green assets, etc.

Green digital deposit and lending solutions enable the use of digital savings to finance environmental projects. They include green digital loans, green linked or transition loans with automated monitoring and green digital mortgages.

Green digital asset solutions include tokens and crypto currencies with green properties and blockchain capital market infrastructure built for green use cases. Some examples of such assets include green utility tokens to reward lower emissions, tokenised carbon credits, green cryptocurrencies designed to be spent on green produces only etc.

Green regtech solutions support regulatory, compliance and reporting requirements. They can include analyses on green taxonomy alignment of assets, monitor the quality of disclosure using AI technology etc.

Source: Green Digital Finance Alliance and the Swiss Green Fintech Network <https://greendigitalfinancealliance.org/green-fintech-classification/>

Venture capital

Venture capital also plays a crucial role in the financial ecosystem, including in financing eco-entrepreneurship and innovation. In recent years, many VC funds have recognised climate tech as a growing investment opportunity, and as a result their investments in this sector have grown rapidly (UNPRI, 2021^[43]). Between 2020 and 2021, for example, VC investments in climate tech grew by 210%, with the average deal size nearly quadrupling (PWC, 2021^[44]). The S&P Global Clean Energy Index, which provides liquid, tradable exposure in companies involved in clean-energy, has generated annualised total returns of more than 40% over the past three years (The Economist, 2021^[45]).

Furthermore, VC funds are increasingly incorporating sustainability criteria in their investment decisions, since VC investments can be exposed to a range of ESG risks (UNPRI, 2021^[43]). According to the European Investment Fund's (EIF) latest survey on VC funds and business angels (BA), approximately 7 in 10 VCs incorporate ESG criteria into their assessment, while 6 in 10 business angels do the same (EIF, 2020^[46]).

Debt markets

Various types of institutions, including governments, financial establishments and non-financial large corporations, issue green bonds with proceeds used to finance SMEs' greening projects. SMEs, which are unable to enter debt market directly, depend on other institutions, mainly banks, to access this capital. Banks can, for example, issue green bonds linked to aggregated SME green projects, or they can issue green securitizations linked to green loans for SMEs (McDaniels and Robins, 2017^[47]). Another way in which SMEs can access debt markets is through the issuance of mini-bonds. (European Commission, 2016^[48]). They are unlisted bonds typically issued by small or start-up companies, or companies that find it difficult to raise funds from institutional investors or borrow money from a bank. Unlike traditional bonds, mini bonds cannot be traded and must be held until maturity, which can make them a less flexible and riskier choice for investors. As a result of these higher risks, mini bonds typically offer higher returns compared to traditional bonds. They are also less regulated, so they require sound risk management both on the part of issuers and investors (FCA, 2022^[49]).

Insurance companies

Insurance companies have a role to play in driving sustainable finance for SMEs by de-risking environmental investments and by limiting coverage for certain polluting assets or sectors. Currently, insurers play an active role in helping companies to secure equity and reduce debt costs by offering insurance cover, which is important to attract both capital and expertise. However, in some sectors de-risking actions are more complex to implement, as the volume and quantity of claims may not be affordable. This can impact the economic viability of businesses or entire sectors and may result in excessive caution while risks are assessed (Marsh McLennan, 2021^[50]). Companies with higher risk profiles such as innovative start-ups and SMEs that operate in eco-innovations may face this problem. Collaboration and strategies to transfer risk are currently being implemented by insurers in order to drive finance towards sustainable projects. Insurers also play an important role by steering underwriting portfolios towards Paris alignment. For example, many insurance companies have committed to cease coverage to new fossil fuel related industries. Other insurers assess the insured's activities or assets. The UN Net Zero Insurance Alliance and its 29 members of leading insurers are working to advance this agenda (UNEP FI, 2022^[51]).

Regulators and policy makers

Public institutions regulate financial markets and institutions. They also design, implement, monitor and evaluate policies and instruments related to the provision of SME financing. All of these actions can have implications for the supply and demand for sustainable finance for SMEs.

Regulators, whether national or supranational like the EU, mandate rules that enterprises and financial institutions have to comply with. In the context of SME sustainable finance, regulators, for example, determine the non-financial disclosure and reporting requirements, which has implications for sustainability integration in financing and across value chains. Notably, the extent to which enterprises, including financial institutions, are required to disclose their emissions (e.g. whether they have to report on Scopes 1, 2 and 3 emissions if they do face disclosure requirements) can have implications for the progress of net zero alignment, activity of the corporate sector and the supply and demand for SME sustainable finance. So can the development of taxonomies which define sustainable activities. Likewise, the types of data that enterprises are required to report on can be an important impetus for net zero action or lack thereof. Whether and how SME reporting and other regulatory requirements are differentiated from those for large enterprises, with due consideration not to disincentivise growth, can have an impact on ESG integration and access to sustainable finance by SMEs (see Box 1.4). The extent to which ESG data, ratings and related services are regulated also affects the sustainable finance landscape for SMEs.

In their supervisory capacity, central banks can influence ESG integration through climate stress testing requirements, or the integration of sustainability criteria in their own operations (decarbonisation of portfolios, disclosure requirements for collateral, etc.). Climate stress tests take into account how physical and market risks related to climate change can impact the financial sector's cash flows, capital needs, market valuations, etc., under different scenarios of climate change (Adrian et al., 2022^[52]).

Public institutions, including government ministries and SME agencies, also have an important role in designing and implementing SME-related policies and providing financial and non-financial support to SMEs. This includes not only policies and instruments to address challenges related to SMEs' access to finance (e.g. through credit guarantees, incentives for SMEs' participation in financial markets, etc.), but also incentives, subsidies and other measures to incentivise SMEs' investment in greening. Public institutions also devise policies to foster the publicly and privately provided non-financial support services that can support SMEs in building the knowledge, skills and capacities needed to support their net zero transition and demand for sustainable finance. These policies can then be implemented by PFIs or other relevant public or private actors in the ecosystem (see Chapter 3).

ESG intermediaries

ESG ratings providers: Ratings providers evaluate and rate companies – most publicly listed companies and many private companies – on their environmental, social and governance (ESG) performance. Some of the ratings are based on quantitative methodologies, using and weighing metrics based on data, either offered by corporate issuers or taken from other industry data sources. Institutional investors, asset managers, financial institutions and others increasingly rely on these ratings (and the underlying data) to assess and measure the ESG performance of companies they invest in or want to invest in (OECD, 2020^[8]). This assessment also forms the basis of informal and formal investor engagement with companies (Huber and Comstock, 2017^[53]). However, few ratings providers currently assess SMEs specifically. Moreover, the data used, methodologies and ratings vary considerably across providers and in the absence of greater transparency, this variation poses challenges in interpretation and use for financial institutions, investors and SMEs (see Chapter 3).

ESG index providers: Index providers utilise ESG ratings to create market indices that enable investors to track the performance of ESG-oriented market portfolios. These index providers offer a range of stylised benchmarks that, in turn, allow for the development of fund products for passive or active investment. They also enable portfolio managers to utilise the index as a benchmark to compare their ability to generate excess risk-adjusted returns (OECD, 2020^[8]). In recent years, the number of ESG indices has soared spurred by the growth in ESG-related data and benchmarks (see Chapter 3). This, in turn, has fostered the rapid growth in ESG funds and exchange-traded funds (ETFs) (Capital Monitor, 2021^[54]).

Providers of auditing services: Audits enable independent verification of the validity of data provided by companies on their ESG performance. As discussed in more detail in Chapter 3, ESG ratings rely significantly on self-reported data, so the quality, objectivity and comparability of that data is difficult to assess without audits.

Providers of ESG-related tools and services: Many non-governmental organisations as well as consultancy firms support SMEs in their decarbonisation and sustainability reporting endeavours. These companies are developing tools to help SMEs identify and measure the sources of their emissions and environmental footprint, develop relevant science-based targets for emissions reduction, take action and monitor their progress toward the identified targets. Many companies are also helping FIs in these endeavours.

Box 1.4. Selected issues for sustainability regulation

Disclosure requirements

Treatment of SME vs. large enterprises: Sustainability-related reporting requirements for SMEs will differ among countries. Most SMEs are currently not required to report on their sustainability performance and those that do report, do so voluntarily. Yet in some countries, most notably the EU members, there is already a timeline for when listed SMEs will be mandated to disclose data on their sustainability performance. Regulations can also differ in terms of what they require from SMEs. It remains to be seen if SMEs will face the same reporting requirements as large enterprises or if they will face a more simplified reporting scheme that is proportional to their resources and capacities. These considerations, among others, are likely to have important implications for the extent and pace at which SMEs are likely to adopt green practices and seek financing for green investments across different jurisdictions.

Scopes of emissions: Disclosure requirements can differ in terms of the scope of emissions they cover. Some regulators are putting forth mandatory disclosure of emissions across all three scopes for large enterprises and financial institutions (for financial institutions, Scope 3 emissions include their “financed emissions” i.e. the emissions stemming from their portfolios). How Scope 3 emissions are treated, has important implications for both the supply of and demand for sustainable finance. If large enterprises are required to report on them, SMEs within their value chain would have to provide the relevant data and could face stronger incentives to improve their sustainability performance around key reported indicators. Similarly, if FIs are required to report on their portfolio emissions - which according to data provided by FIs are between 100 and 1000 times higher than the emissions stemming from the banks’ own operations (Economist, 2020^[55]) - they are more likely to start allocating more financing toward better performing SME, SMEs that can or already provide the relevant data on their sustainability performance and/or high-emitting SMEs that have credible plans and investments in place to reduce their carbon footprint.

Materiality: Regulatory requirements can also differ in terms of how they define materiality. Materiality can be defined based on the principle of financial materiality, which means that environmental factors are only considered as factors of risk and opportunity for the firm with the end goal of maximising firm value. This is different from environmental and social materiality, which aim to identify and assess enterprises’ impacts on the economy, society and the environment. In current proposals for sustainability disclosure requirements, the treatment of materiality differs, with some regulators opting to use double materiality in defining reporting requirements (i.e. enterprises and financial institutions have to report) and others focusing only on financially material factors.

Risks and opportunities: Disclosure requirements may entail considerations of (material) risks related to climate change only, or they can also mandate reporting on how financial institutions are addressing climate-related opportunities. The Taskforce for Climate-related Financial Disclosures (TCFD) framework recommends the consideration and reporting on both risks and opportunities related to climate change. Risks entail physical risks from severe weather events (e.g. floods, hurricanes, etc.) and chronic changes in the climate (e.g. higher temperatures, rising sea levels, etc.) as well as transition risks related to regulatory changes, changing consumer demand, etc. (see Chapter 2). Opportunities, on the other hand, entail considerations of improved resource efficiency, new products and markets and other benefits that can accrue to enterprises from investments in greening.

Source: (The SustainAbility Institute and Persefoni, 2022^[56])

Standard setters, international initiatives and high-level guidance

International disclosure and standard setting bodies provide guidance, frameworks and standards for the measurement and reporting on the sustainability-related performance of enterprises across different industries. The past decade has seen a proliferation of disclosure standards and organisations, driven by the growing demand for companies to provide investors and other stakeholders with information on how climate-related risks are being managed (Box 1.5). However, this rapid growth also has created considerable complexity and confusion both among investors and issuers, leading to calls for “improving the completeness, consistency, comparability, reliability and auditability of sustainability reporting” (IOSCO, 2021^[57]).

As a result, the past year has seen increased efforts to align initiatives and frameworks. Most notably, the newly established International Sustainability Standards Board (ISSB), which consolidated three other organisations (CDSB, IIRC and SASB), has developed the “*General Requirements for Disclosure of Sustainability-related Financial Information and Climate-related Disclosures*,” whose main objective is to provide a global baseline that individual jurisdictions and regulators can adopt or otherwise use when they develop their own disclosure requirements (see Box 1.5).

The recently established Impact Management Platform, whose Secretariat is hosted by the OECD, represents a collaboration between leading providers of public good standards, frameworks, tools, and guidance for managing sustainability impacts, whose objective among other goals is to identify opportunities to clarify actions of impact management, with a focus on advancing and demonstrating the interoperability among the different resources (IMP, 2021^[58]). Likewise, UNEP FI is working with peer organisations towards a complete and coherent system of norms and guidance for impact management (UNEP FI, 2022^[59]).

High level guidance is also provided through principles and guidelines developed by international organisations (OECD, UN, World Bank, WEF, etc.) working on these topics. These principles are not legally binding, but they provide high-level guidance to policy makers, enterprises and other stakeholders on different aspects of sustainability. Adherence to these principles also represents a way to showcase entities’ commitments to these objectives. Relevant high level guidance developed by the OECD on this topic includes: the 2022 Updated OECD/G20 High-Level Principles on SME Finance¹; the Policy Guidance on Market Practices to Strengthen ESG investing and Finance a Climate Transition²; OECD Guidance on Transition Finance; OECD Principles for Corporate Governance³; OECD Guidelines for Multinational Enterprises⁴; OECD Due Diligence Guidelines for Responsible Business Conduct⁵; OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas⁶. Furthermore, the G20, through its Sustainable Finance Working Group, has undertaken work to develop a framework on transition finance, improve the credibility of private sector FI commitments and scale up sustainable finance instruments (G20 Sustainable Finance Working Group, 2022^[60]).

¹ <https://www.oecd.org/cfe/smes/2022-Update-OECD-G20-HLP-on-SME-Financing.pdf>

² <https://www.oecd.org/publications/policy-guidance-on-market-practices-to-strengthen-esg-investing-and-finance-a-climate-transition-2c5b535c-en.htm>

³ <https://www.oecd.org/corporate/principles-corporate-governance/>

⁴ <https://www.oecd.org/corporate/mne/>

⁵ <https://www.oecd.org/investment/due-diligence-guidance-for-responsible-business-conduct.htm>

⁶ <https://www.oecd.org/corporate/mne/mining.htm>

Box 1.5. Selected sustainability disclosure organisations

The **International Sustainability Standards Board (ISSB)** was created in order to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions. It was created in 2021 by merging three other organisations, the Sustainability Accounting Standards Board (SASB), which provided guidance to guide materiality of metrics across industries, which in turn are used by ESG assessors; Climate Disclosure Standards Board (CDSB) which was working to provide material information for investors and financial markets through the integration of climate change related information into mainstream financial reporting; International Integrated Reporting Council (IIRC) was a global coalition of regulators, investors, companies, standard setters, the accounting profession, academia and NGOs. The coalition promote communication about value creation as the next step in the evolution of corporate reporting.

Global Reporting Initiative (GRI), an international independent standards organisation, provides specific standards of reporting key sustainability metrics by industry, based on engagement with a host of stakeholders and standard setters on sustainability issues.

The Taskforce for Climate-related Financial Disclosures (TCFD), under the auspices of the Financial Stability Board, developed a set of key recommendations for the disclosure of climate-related financial disclosures considered to be material to investors and lenders.

The Glasgow Financial Alliance for Net Zero (GFANZ) is a global coalition of leading financial institutions committed to accelerating the decarbonisation of the economy. GFANZ provides the tools and resources the financial sector needs to implement its net-zero commitments, which are made in accordance with the UN Race to Zero campaign's criteria.

International Corporate Governance Network (ICGN) is to promote effective standards of corporate governance and investor stewardship to advance efficient markets and sustainable economies world-wide.

Source: (OECD, ESG Investing and the Climate Transition: Market Practices, Issues and Policy Considerations, 2020)

A range of green instruments has the potential to meet SME financing needs

SMEs need access to different financing instruments to fit their diverse sustainable investment needs. As most SMEs are eco-adopters, i.e. firms seeking to improve the sustainability of their operations, access to debt and other low risk/low return financing (e.g. leasing) is critical to enable these enterprises' investments in greening. Eco entrepreneurs and innovators, on the other hand, need access to risk financing (equity, grants) in order to develop and scale up their risky innovative projects in clean-tech and beyond.

Key instruments for green and sustainable finance include:

Green loans: Green loans are the most widely used sustainable finance instruments. They include funding committed exclusively to finance green projects such as climate change, natural resources depletion, loss of biodiversity, and air, water and soil pollution. These instruments involve a periodic reporting by the borrower to the lender of the actual use of proceeds, through qualitative or quantitative performance measures (e.g. electricity generation, or reduction of GhG emissions). They are well-suited to finance eco-adoption and eco-innovation and thus are likely to be the main source of finance for the green transition in the near term.

Green loans can be extended as direct loans provided by banks and PFIs or indirect loans from PFIs channelled through private banks and/or other service providers (e.g. energy providers). Green loans can

be provided on concessional terms - i.e. terms that are (substantially) more favourable compared to what can be obtained on the market. That means they can offer below-the market interest rates, longer grant periods or other more favourable terms. Such loans may be conditional on measures going beyond regulatory requirements (e.g. use of best available techniques or best management practices).

Private lending to SMEs can be supported through **green credit guarantees** from public or private institutions. Green credit guarantees have specific eligibility criteria aligned with environmental objectives that can be based on the use of proceeds and/or on the characteristics of borrowers. Green guarantees may have monitoring and evaluation frameworks to measure and report on the environmental performance of the guaranteed portfolio.

Green bridge loans: These loans provide SMEs with short-term financing options before more long-term financing can be secured. This instrument is particularly useful for green pioneer companies facing high upfront costs and risks in early-stage development and between funding rounds, e.g. developing cutting-edge technologies in areas such as clean energy or mobility.

Green supply chain finance / green factoring: Supply chain finance involves a buyer approving its supplier invoices for financing by a bank when a product or service is provided. This type of financing helps the supplier get short-term credit and optimize working capital, while the buyer gets more time to pay off balances (OECD, 2015^[61]). Green supply chain finance entails the provision of financing at preferential conditions upon demonstrated sustainability performance and can vary depending on the sustainability performance (ESG Today, 2022^[62]).

Green bonds: Green bonds are fixed income instruments designed to finance climate- or environment-related projects. Large and more established SMEs can issue green bonds themselves, but the majority of SMEs can benefit from green bonds indirectly i.e. via financing from the proceeds of green bond issued by financial institutions. Mini-bonds, meanwhile, can be issued by green start-ups or SMEs. They often cannot be traded and must be held until maturity, as they do not usually have a secondary market for investors to exit early. Green mini bonds are also less regulated and given their high perceived risk, they offer higher returns compared to traditional bonds.

Green equity instruments: Green equity includes both venture capital and private equity aimed specifically at funding innovative solutions to address environmental challenges (e.g. Green-tech, sustainability start-ups). Green VCs typically fund the development of pilot-scale green projects where investments can have long funding periods. This includes continuous monitoring and reporting, and investors are directly involved in the corporate governance of investees to ensure products and processes are aligned to climate objectives. PE funds finance green start-ups in advanced stages and incorporate green indicators to evaluate performance. Green equity can also include investments from public funds aimed at promoting green entrepreneurship and innovation.

Green grants: Green grants can be used to help firms offset high upfront costs related to the implementation of green technologies and/or processes as well as to incentivise the production of green products and services. They can be provided solely as grants or as part of hybrid financing programmes in combination with debt or equity financing.

Hybrid financing instruments: With these instruments, PFIs are able to offer additional incentives for SMEs' green transition. SMEs are likely to benefit more from green investments as compared to alternative investments, because of favourable financing conditions, e.g. when a green loan is connected to a grant. For example, PFIs can provide a certain percentage of the green loan in the form of a grant if the company uses the grant for targeted green measures such as investment in renewable energy or energy efficiency.

ESG-linked instruments: ESG-linked instruments are financing instruments that tie the financing conditions to the sustainability/ESG performance of the issuer/recipient. They can include ESG-linked loans or ESG-linked bonds. ESG-linked loans have a dynamic interest rate linked solely to selected sustainability performance indicators, such as carbon emissions or a specific ESG target. Beneficial

conditions are not tied to the use of proceeds (like in green concessional loans). ESG-linked bonds have coupons linked to sustainability performance targets (e.g. EU Taxonomy, UN Sustainable Development Goals related to climate change or environmental degradation).

Table 1.1 provides an overview of the different instruments for sustainable and green financing for SMEs.

Table 1.1. Typology of sustainable and green financing instruments for SMEs

Instrument	Typology	Actors involved	Characteristics	Environmental aspects of the instrument
Green loans	Debt	PFI, Banks	Lending to green SMEs can be enhanced through targeted SME lending portfolios or green credit lines.	Loans whose funds are committed exclusively to finance green projects such as climate change, natural resources depletion, loss of biodiversity, and air, water and soil pollution. These instruments involve a periodic reporting by the borrower to the lender of the actual use of proceeds, through qualitative or quantitative performance measures (e.g. electricity generation, or reduction of GHG emissions).
Concessional loans	Debt	PFI, Non-Commercial banks	As PFI are supported by governments to achieve policy goals, they are in a position to provide loans with favourable terms for SMEs i.e. grace periods and low interest rates	Loans used specifically for environmental investments and granted with (substantially) more favourable terms compared to market loans (below-the market interest rates, longer grant periods or a combination of both). Such loans may be conditional on measures going beyond regulatory requirements. (e.g. use of best available techniques or best management practices).
Bridge loans	Debt	PFI, Investors	Bridge loans can be crucial for the survival of green projects. Given the large risk of sustainable projects, this instrument allows the SME to have capital until permanent or next stage financing can be obtained.	Instrument particularly useful for green pioneer companies facing high upfront costs and risks in early stage development phases and between funding rounds, e.g. developing cutting-edge technologies in areas such as clean energy or mobility.
Revolving credit	Debt	PFI, Banks	Revolving credit give flexibility to green SMEs as they can use funds when they need it. The requested amount is available, once used and repaid, the credit replenishes.	Green revolving credits are often dedicated to fund energy efficiency, renewable energy, and/or sustainability projects that generate cost savings. A portion of the savings are used to replenish Green Revolving Funds allowing reinvestment in future similar projects.
Loan guarantees to banks	Debt	PFI, Banks, Mutual Guarantee Societies	PFIs can incentivize bank lending by providing guarantees to green credit lines. Eco-credits are examples of loan guarantees to promote energy efficiency projects	Green credit guarantees have specific eligibility criteria aligned with environmental objectives that can be based on the use of proceeds and/or on the characteristics of borrowers. Green guarantees may have monitor and evaluation frameworks to measure and report climate performance and disclose the carbon footprint of the guaranteed portfolio.
Green supply chain financing/ green factoring	Debt	PFIs, Banks, Enterprises	Financial institutions as well as enterprises can use this instrument to support SME greening in supply chains.	Supply chain finance involves a buyer approving its supplier invoices for financing by a bank when a product or service is provided. This type of financing helps the supplier get short-term credit and optimize working capital, while the buyer gets more time to pay off balances. Green supply chain finance entails the provision of financing at preferential rates upon demonstrated sustainability performance. Such preferential rates can potentially improve along with sustainability scores.

Grants for green projects	Grants	PFI	PFI can channel governmental grants for green SME projects. Grants can include cash transfers as well as technical support.	While green subsidies are specifically used to help firms offset high upfront costs related to the implementation of green technologies and/or processes, green grants can be used for a broader set of purposes (e.g. incentivize production of green products and services).
Equity	Equity	Impact Investors, PFI, Venture capital funds	Equity is one of the main instruments used by impact investors but it can also be used by PFIs and private financial institutions	Green Equity includes both Venture Capital and Private Equity aimed specifically at funding innovative solutions to address environmental challenges (e.g. Green-tech, sustainability start-ups). Green VC typically fund the development of pilot-scale green projects where investments can have long funding periods. It has continuous monitoring and reporting, and investors are directly involved in corporate governance to ensure products and processes are aligned to climate objectives. PE fund green start-ups in advanced stages, and also incorporate green indicators to evaluate performance.
Hybrid Financing	Equity and Debt	Impact Investors, PFI	Hybrid instruments combine debt and equity. It is useful for SMEs as they can convert outstanding debt into equity.	With hybrid financing instruments PFIs are able to offer additional incentives for SMEs' green transition. SMEs are likely to benefit more from green investments as compared to alternative investments because of favourable financing conditions, e.g. when a green loan is connected to a grant. For example, PFIs can provide a certain percentage of the green loan in the form of a grant if the company uses the grant for targeted green measures such as investment in renewable energies or energy efficiency.
Mini-green bonds	Capital Markets	Banks, PFI, Impact Investors	They are smaller green bonds to allow the access of unlisted SMEs to capital markets. Mini bonds can complement large green bonds. The downside is that they are often perceived as risky investments, thus they are guaranteed by public institutions.	A bond instrument committed exclusively to financing environmental or climate projects. Mini-bonds are issued by green start-ups or SMEs. They often can't be traded and must be held until maturity, as they do not usually have a secondary market for investors to exit early. Green mini bonds are also less regulated, and given their high perceived risk they offer higher returns compared to traditional bonds.
ESG-linked instruments	Debt, capital markets	Banks, PFIs, Impact investors	Loans or bonds whose financing conditions are tied to the sustainability/ESG performance of the issuer.	ESG-linked loans have a dynamic interest rate linked solely to selected sustainability performance indicators, such as carbon emissions or a specific ESG target. Beneficial conditions are not tied to the use of proceeds (like in green concessional loans). ESG-linked bonds have coupons linked to sustainability performance targets (e.g. EU Taxonomy, UN Sustainable Development Goals related to climate change or environmental degradation).

Source: OECD, based on (ASEAN, 2019^[63]), (European Commission, 2017^[64]), (European Parliamentary Research Service, 2021^[65]), (FCA, 2022^[49]), (KfW, 2022^[65]), (McDaniels and Robins, 2017^[47]), (OECD, 2015^[61]), (Sustainalytics, 2022^[66]), (The Montreal Group, 2016^[67]), (Kim et al., 2022^[68]), (US Department of Energy, 2021^[69]), and (World Bank, 2021^[70]) (Lin, 2022^[71]).

2 What drives sustainable finance for SMEs?

Most SMEs are only at the beginning of their journey to net zero and account for a relatively small share of sustainable finance investments. Enabling SMEs to reap the benefits from sustainable finance and investment requires an understanding of what drives the demand for and the supply of sustainable finance for SMEs. This chapter explores how different imperatives to adapt to the net zero transition affect the willingness of financial institutions to allocate more capital toward sustainable investment by SMEs. Likewise, it considers how different factors drive SMEs' demand for green finance and investment. (British Business Bank, 2021^[15]; Business Development Bank of Canada, 2021^[16]).

The need to manage risks and seize opportunities related to the net zero transition is driving the supply of sustainable finance

Banks, insurance companies and other financial institutions are increasingly taking into account the potential impacts of physical and transition risks related to climate change in their SME-related assets and liabilities. The range of impacts is wide, from material damage related to increasingly severe weather events, to the risks posed by the green transition itself, including regulatory, technology, market and reputation-related risks (Table 2.1). This is an important driver for the provision of sustainable finance as a key aspect of managing these risks within SME portfolios entails allocating capital to projects and SMEs with relatively lower climate-related risks or relatively stronger action to mitigate those risks (measured for example by ESG ratings/assessment).

Table 2.1. Examples of climate-related risks and opportunities and potential financial impacts

Type	Climate-Related Risks	Potential Financial Impacts
Transition Risks	Policy and Legal	
	<ul style="list-style-type: none"> – Increased pricing of GHG emissions – Enhanced emissions-reporting obligations – Mandates on and regulation of existing products and services – Exposure to litigation 	<ul style="list-style-type: none"> – Increased operating costs (e.g., higher compliance costs, increased insurance premiums) – Write-offs, asset impairment, and early retirement of existing assets due to policy changes – Increased costs and/or reduced demand for products and services resulting from fines and judgments
	Technology	
	<ul style="list-style-type: none"> – Substitution of existing products and services with lower emissions options – Unsuccessful investment in new technologies – Costs to transition to lower emissions technology 	<ul style="list-style-type: none"> – Write-offs and early retirement of existing assets – Reduced demand for products and services – Research and development (R&D) expenditures in new and alternative technologies – Capital investments in technology development – Costs to adopt/deploy new practices and processes
Markets		
	<ul style="list-style-type: none"> – Changing customer behaviour – Uncertainty in market signals – Increased cost of raw materials 	<ul style="list-style-type: none"> – Reduced demand for goods and services due to shift in consumer preferences – Increased production costs due to changing input prices (e.g.,

Type	Climate-Related Risks	Potential Financial Impacts
		energy, water) and output requirements (e.g., waste treatment) – Abrupt and unexpected shifts in energy costs – Change in revenue mix and sources, resulting in decreased revenues – Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)
		Reputation – Reduced revenue from decreased demand for goods/services – Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions) – Reduced revenue from negative impacts on workforce management and planning (e.g., employee attraction and retention) – Reduction in capital availability
Physical risks	Acute – Increased severity of extreme weather events such as cyclones and floods Chronic – Changes in precipitation patterns and extreme variability in weather patterns – Rising mean temperatures – Rising sea levels	– Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions) – Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism) – Write-offs and early retirement of existing assets (e.g., damage to property and assets in “high-risk” locations) – Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants) – Increased capital costs (e.g., damage to facilities) – Reduced revenues from lower sales/output – Increased insurance premiums and potential for reduced availability of insurance on assets in “high-risk” locations
Type	Climate-Related Opportunities	Potential Financial Impacts
Resource Efficiency	– Use of more efficient modes of transport – Use of more efficient production and distribution processes – Use of recycling – Move to more efficient buildings – Reduced water usage and consumption	– Reduced operating costs (e.g., through efficiency gains and cost reductions) – Increased production capacity, resulting in increased revenues – Increased value of fixed assets (e.g., highly rated energy efficient buildings) – Benefits to workforce management and planning (e.g., improved health and safety, employee satisfaction) resulting in lower costs
Energy Source	– Use of lower-emission sources of energy – Use of supportive policy incentives – Use of new technologies – Participation in carbon market – Shift toward decentralized energy generation	– Reduced operational costs (e.g., through use of lowest cost abatement) – Reduced exposure to future fossil fuel price increases – Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon – Returns on investment in low-emission technology – Increased capital availability (e.g., as more investors favour lower-emissions producers) – Reputational benefits resulting in increased demand for goods/services
Products and Services	– Development and/or expansion of low emission goods and services – Development of climate adaptation and insurance risk solutions – Development of new products or services through R&D and innovation – Ability to diversify business activities – Shift in consumer preferences	– Increased revenue through demand for lower emissions products and services – Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services) – Better competitive position to reflect shifting consumer preferences, resulting in increased revenues
Markets	– Access to new markets – Use of public-sector incentives – Access to new assets and locations needing insurance coverage	– Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks) – Increased diversification of financial assets (e.g., green bonds and infrastructure)

Note: The sub-category risks described under each major category are not mutually exclusive, and some overlap exists.

Source: (Task Force on Climate Related Financial Disclosures, 2017^[72])

The net zero transition of financial institutions also entails managing climate-related opportunities. For financial institutions, these predominantly entail providing new products and services to SMEs that are borne out of the needs of the net zero transition, which include the aforementioned green and ESG-linked instruments as well as non-financial services linked to sustainability measurement and reporting.

Financial institutions are subject to more stringent regulatory requirements on non-financial performance

Financial institutions are becoming subject to increased regulatory scrutiny and requirements related to their performance on a range of sustainability factors. The introduction of sustainability-related disclosure requirements for financial institutions serve as incentives for channelling more financing toward investments with better environmental performance (as measured for example by ESG ratings or scores) or investments that would improve the sustainability performance of carbon-intensive industries and enterprises (Box 2.1). Financial industry regulators are also increasingly conducting trial exercises in climate stress testing or scenario analysis in order to assess the preparedness of financial institutions to meet supervisory expectations regarding climate risk management and practices, including on their SME assets.

Box 2.1. Non-financial disclosure requirements driving sustainable finance

Financial institutions as well as large (publicly traded) enterprises are increasingly required to report on their non-financial performance. Non-financial disclosures related to climate can help investors to better evaluate price risks related to carbon emissions reduction goals, and could, thus, encourage firms to adopt strategies which would curb their exposures to such risks (e.g. by investing in products that are less carbon-intensive) (Better et al. 2016).

Many OECD countries are raising the requirements for reporting on non-financial performance. **In the European Union**, for example, the draft Corporate Sustainability Reporting Directive proposes to mandate reporting on emissions across the entire value chain (i.e. Scopes 1, 2 and 3) and the reporting requirements are based on double materiality in line with the TCFD recommendations. The Directive also proposes an extension of companies with reporting requirements to include listed small and medium enterprises, depending on the country-level regulations, starting from January 2026. Non-listed SMEs will also be able to voluntarily disclose their non-financial information, and will be allowed to report according to standards that are simpler than the standards that will apply for large companies (Ernest & Young, 2022^[73]).

In the US, meanwhile, the **Securities and Exchange Commission (SEC)** recently unveiled proposals to enhance and standardise climate-related disclosures for all US public companies. Under the proposal, listed companies would have to report on all climate indicators that are “reasonably likely to have a material impact on their business, results of operations, or financial condition.” In other words, the SEC proposal is currently based on the concept on financial materiality only. Likewise, the SEC proposal does not require mandatory reporting of Scope 3 emissions. Sustainability reporting remains voluntary for non-public companies (SEC, 2022^[74])

Canada will require banks and insurance companies to provide disclosures on their climate-related risks and exposures beginning in 2024. These disclosure requirements will have to be aligned with the Task Force on Climate-Related Financial Disclosures (TCFD). The plan covers different sectors which are considered central for the economy’s greening, including energy, mineral mining or agriculture among others (ESG Today, 2022^[75]). The current plan entails a phased introduction of reporting requirements including for scope 1, 2 and 3 emissions.

In Korea, the Financial Services Commission (FSC) announced its plans to encourage listed companies to voluntarily disclose ESG information via sustainability report issuance by 2025, and gradually require mandatory ESG disclosures for all listed companies starting 2030 (FSC, 2021^[76]).

The **Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD)** recommends mandatory disclosure requirements for all financial organizations – including banks, insurance companies, asset managers and asset owners – in their public financial filings (TCFD 2016b). Banks, insurers, pension funds and investors with balance sheets of USD 139 trillion are demanding TCFD-aligned climate disclosure from companies (SEC, 2022^[74]).

The extent to which these regulatory changes will play a role in strengthening the supply of sustainable finance for SMEs is likely to depend on the stringency of requirements. For example, analyses of the US Securities and Exchange Commission (SEC), the European Financial Reporting Advisory Group (EFRAG) and the ISSB’s proposals standards indicate notable differences: those of EFRAG and ISSB follow the TCFD recommendations to include Scope 3 emissions generated across the entire value chain, but the SEC’s requires reporting on Scope 3 emissions only if they are deemed material or if the company has stated emissions reduction goals that include Scope 3 emissions. The proposed standards also differ in their treatment of materiality- EFRAG’s are based on double materiality, while the SEC’s is based on financial materiality only, which can also impact the relative incentives to reduce emissions from direct operations as well as from the financed (SME) portfolios (Box 2.2).

As regulators move to enhance the transparency and interoperability of definitions, data and methodologies and limit the scope for “greenwashing” in ESG investing and sustainability reporting (i.e. artificial elevation of environmental scores that provide a misleading picture of a company’s environmental performance), these incentives are likely to grow further. The development of green taxonomies or relevant principles is an important step in this direction as they provide a classification of economic activities that can be considered environmentally sustainable (Box 2.3).

Box 2.2. Financial supervision and Central Bank assets

Since the economic and financial crisis of 2008, financial institutions have systemized the use of resilience tests in their risk assessment. Stress testing aims to analyse the potential impact of an external shock on the health of the financial system and institutions, which allows financiers and policy makers to assess their resilience to a range of adverse shocks. Stress-testing models increasingly consider climate change and other environmental scenarios, including stresses that arise from the transition to a net zero economy.

In January 2022, **the ECB** launched a supervisory climate stress test to assess banks' preparedness for dealing with the financial and economic shocks from climate-related risks. The ECB has also announced its aims to further incorporate climate change considerations into its monetary policy framework through gradually decarbonising its portfolio of corporate bond holdings and introducing climate-related disclosure requirements for collateral. The Bank intends to transition the Eurosystem's nearly €350 billion corporate bond portfolio towards issuers with better climate performance.

To include climate considerations into future purchase decisions and ultimately decarbonise its portfolio, the ECB introduced so-called "climate scores" in October 2022. To tilt bond holdings towards better scoring issuers, the ECB combines three sub-scores. The backward-looking emissions sub-score measures companies' performance in comparison with peers in their sector and all other eligible bond issuers. The backward-looking score includes Scope 1 and 2 emissions data for the company concerned, but also Scope 3 emissions at the sector level (quality of issuer-specific data are not deemed sufficiently high) to reflect on the companies' overall carbon footprint. Sector level data are used for the Scope 3 emissions because they are more reliable than issuer-specific Scope 3 data, which lack sufficient quality (ECB, 2022^[77]). The other two sub-scores encompass forward looking targets based on the quality of the issuer's objective to reduce Greenhouse gas emissions and a climate disclosure sub-score based the assessment of the issuers' reporting of Greenhouse gas emissions.

The **Network of Central Banks and Supervisors for Greening the Financial System (NGFS)** disseminates methodologies and instruments to manage environmental risks in the financial sector, such as stress testing and scenario analysis. The network was established by eight Central Banks and supervisors in 2017 and since then, it has grown to more than 80 members. Several international organizations serve as observers: the EIB, EBRD, IMF, the OECD and the World Bank (European Parliamentary Research Service, 2021^[6]).

The **Bank of England (BoE)** runs biennial Exploratory Scenario on financial risks from climate change, which explore the physical and transition risks associated with three scenarios of early, late and no additional action (Bank of England, 2015^[78]).

The US Federal Reserve's CRISK (systemic climate risk) measures the expected capital shortfall of a financial institution in a climate stress scenario.

The **Bank of Japan (BOJ)** and the **Financial Services Agency (FSA) of Japan** examine the results of the financial institutions' own stress tests and have held a series of dialogues with financial institutions to encourage them to improve their stress testing models and incorporate the results in their managerial decisions. In addition, the BOJ conducts macro stress testing using its own model, in order to analyse and evaluate the stability of the financial system as a whole, and the results are published semi-annually in the Financial System Report (Bank of Japan, 2020^[79]).

Box 2.3. The development of green taxonomies

The **EU green taxonomy** provides a classification of economic activities that can be considered for sustainable investments. By providing this classification, the taxonomy aims to support better alignment of investment with the climate goals and environmental objectives more broadly. It aims to do so through limiting greenwashing, helping companies to become more climate friendly, mitigating market fragmentation and supporting the flow of capital toward activities that advance the climate agenda. It is considered the most advanced and ambitious effort to standardise definitions of sustainability and greening and provides a basis from which other countries can develop similar efforts. It distinguishes between three types of investments: investments in green activities, those that enable greening activities and transitional activities that are not sustainable but have low carbon emissions (e.g nuclear and gas). In the EU, providers of financial products now have to disclose which of their investments comply with the sustainability criteria of the taxonomy. Large enterprises and all listed companies must also disclose what share of their turnover and capital expenditure are sustainable in line with the taxonomy criteria (European Commission, 2020^[80]) (Reuters, 2022^[81]).

In **Canada**, the development of the so-called Transition Taxonomy has been led by the private sector (6 major banks, pension funds and insurance companies).

Colombia recently launched its own green taxonomy plan, the first country in the region to do so (bnamericas, 2022^[82]).

In **Korea**, the government has developed a Korean Green Classification System (K-taxonomy) to clearly define what can be considered green activities in order to prevent greenwashing (IBK, 2022^[39]).

In **Singapore**, the Green Finance Industry Taskforce has begun the development of a taxonomy that would be used by Singapore-based financial institutions who are also active in the ASEAN region.

In **South Africa**, the National Treasury launched in April 2022 its Green Finance Taxonomy (GFT) which builds on the technical content of the EU Sustainable Finance Taxonomy (Modern Mining, 2022^[83]).

The **UK** Green Technical Advisory Group is advising the Government on the development of a UK taxonomy (Green Finance Institute, 2022^[84]).

Other countries that have taken steps to develop and implement green taxonomies include Chile, Georgia, Malaysia, Mexico, etc. (Natixis, 2021^[85]).

Investor demand for sustainable finance is rising

The rapid rise in investor demand for sustainable investment is also driving the supply of sustainable finance. Sustainable finance has seen tremendous growth over the past decade. ESG integration now accounts for about USD 40 trillion in assets under management, and financial institutions around the globe are increasingly pledging to integrate ESG factors into their risk management and investment decisions as well as to align their portfolios with net zero (Global Sustainable Investment Alliance, 2020^[86]) (BNP Paribas, 2021^[87]).

The increase in demand for sustainable finance has been driven by investors' growing awareness of the importance and urgency of tackling the climate crisis and other environmental and social challenges (Global Sustainable Investment Alliance, 2020^[86]). According to a recent poll, 88% of institutional investors place sustainability on par with operational and financial considerations when making investment decisions. Furthermore, 60% of respondents base their decision on where to work on their beliefs and values and 58% buy or advocate for brands that match their values (Edelman, 2022^[88]).

Besides growing awareness and value-based investment decision-making, purely financial considerations also drive investors' decisions. Survey data shows that 83% of early-stage investors in Europe prefer to invest in more environmentally sustainable start-ups, as they are likely to perform better when they have sustainability goals in their business models. Likewise, 59% of investors said that they have declined an investment opportunity in the last year due to sustainability concerns (SME guidance for business growth, 2022^[89]).

In fact, the growing evidence that strong environmental and social performance does not have to come at the expense of financial returns has spurred investor demand for sustainable investments. Numerous reports have found a strong and positive association between environmental and financial performance through higher productivity (OECD, 2021^[20]). For example, examining a dataset of 337 Dutch and Chinese firms Vijfvinkel, Bouman and Hessels, 2011^[80] discovered a significant positive relationship between environmental sustainability and firm performance. A systematic literature review of published research articles in the field of sustainability and SME financial performance between 1999 and 2018 concludes that the majority of articles empirically confirmed a positive association between corporate sustainability and SMEs' performance (Bartolacci, Caputo and Soverchia, 2019^[90]).

That said, it is likely that the positive effect of environmental innovation on financial performance of the firm varies depending on the type of environmental action taken and the intrinsic characteristics of the firm. For example, resource-saving and eco-innovation is associated with an increase in productivity, but pollution-reducing innovations are correlated with reduced productivity (van Leeuwen and Mohnen, 2017^[91]). Similarly, the relationship between environmental and financial performance may vary by type of SME. The 2021 round of the Eurobarometer survey shows that 27% of SMEs that take resource efficiency actions decreased their production costs over the last two years. However, the reduction in costs was more likely for medium-sized firms (31%) than for micro-enterprises (27%), and more in older firms (29%) compared to recently created (9%) (European Commission, 2021^[17]).

The proliferation of new instruments and platforms spurred by the growth in Fintech and the digital revolution more broadly has also boosted the demand for sustainable investment (EY, 2017^[92]). Fintech already plays an important role in boosting SMEs access to sustainable finance and providing non-financial support to SMEs as well as other actors in the ecosystem. By leveraging big data analytics and artificial intelligence, Fintech has the potential to play an even bigger role in this area in the future.

In line with the growing demand, financial institutions and institutional investors are boosting the availability of sustainable and green finance instruments and stepping up their sustainability-related commitments. Most banks in OECD countries have now pledged to decarbonise their own operations as well as their portfolios, with some pledging to achieve net zero even by 2030 or 2040. Recent years have also seen a significant growth in international initiatives aiming to support the financial sector's transition to net zero. Some of these initiatives include UNEP FI's Net Zero Banking Alliance and the Net Zero Insurance Alliance, the Glasgow Financial Alliance for Net Zero (GFANZ), Bankers for Net Zero and others.

The corporate sector, too, is stepping up its net zero commitments, with a growing number of enterprises adopting science-based targets. According to the Science-Based Targets Initiative (SBTI)'s 2021 Annual Progress, the number of commitments has been exponentially rising. The majority of SBTI companies have commitments in line with the 1.5°C increase in global temperatures target and most of these companies have targets covering emissions across their entire value chains.

That said, concerns over potential legal risks associated with commitments through these various initiatives have also raised participation concerns among many financial institutions. Recently, a number of leading FIs have considered leaving the GFANZ over what they perceive to be heightened risks of litigation related to their potential inability to meet more stringent net zero commitments under the alliance (Financial Times, 2022^[93]).

Reputational considerations drive capital allocation toward green investments

With a more sustainability-conscious investor base, financial institutions face reputational risks if they continue to invest in fossil fuels without credible plans for net zero transition or if they do not improve their own sustainability performance. A recent poll of investors showed that 57% feel pressure to divest from fossil fuels, 65% feel pressure to reduce those fuels' weights in their portfolios, and 75% feel pressure to invest in "green" funds and companies (Axios, 2022^[94]).

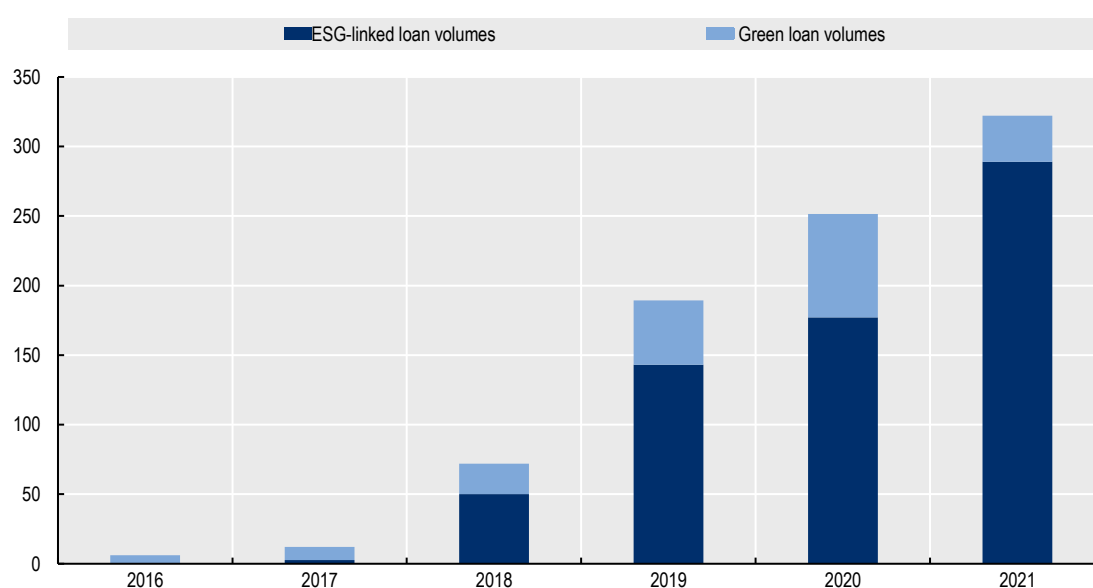
However, these incentives are tempered by the risk of "greenwashing". In the context of a large diversity in sustainability-related standards and reporting requirements as well as in ESG rating methodologies, the lack of transparency associated with these different methodologies provides financial institutions and other enterprises with room to exaggerate their sustainability performance and amplify their ESG ratings. This can act as a dampening force on the growth of sustainable finance, particularly for SMEs, which have more limited capacities to cosmetically boost their performance.

The green transition offers financing providers with opportunities to broaden products and markets

The green transition offers considerable opportunities for financial institutions to expand into new products, services and markets. Financial institutions can offer a wider range of sustainable finance products to existing and new customers, and those who move more rapidly into the space can gain a better competitive position. Evidence shows that the number of financial institutions expanding sustainable banking activities is increasing rapidly: global sustainable lending activity grew from USD 6 billion in January 2016 to USD 322 billion in September 2021, representing at that point more than one-tenth of the global syndicated loans market (Figure 2.1) (Kim et al., 2022^[68]). Financial institutions are not only implementing strategies to scale sustainable lending focusing on specific green sectors and/or social benefits, but they are also taking the lead in examining the inclusion on environmental factors in the provision of loans, including credit ratings, to increase the likelihood that green SMEs can access finance (McDaniels and Robins, 2017^[42]).

Figure 2.1. Rise of sustainable lending activity globally

Total issuance amount, USD billion



Note: The sample consists of 1,127 ESG-linked loans and 1,228 green loans. In 2021, the figures reported are up to September.

Source: (Kim et al., 2022^[68]) Finance Meeting EUROFIDAI - ESSEC, European Corporate Governance Institute – Finance Working Paper No. 817/2022, <http://dx.doi.org/10.2139/ssrn.3865147>

The Fintech sector is also seizing opportunities in the green economy and boosting the supply of sustainable finance. Data-driven Fintech companies serve a wider range of SME clients by addressing some of the information asymmetries that have traditionally undermined SME financing. They are also able to provide SMEs with faster access to finance through more tailored solutions, and this also includes sustainable finance. For example, Fintech companies provide discounted financing for carbon neutral SME clients, similar to the offerings of sustainability linked bonds (Green Digital Finance Alliance, 2022^[95]).

Recent years have seen a strong growth in technology start-ups that offer support services that can help accelerate the growth in sustainable finance. They provide financial institutions with tools and services to help navigate new ESG-related regulatory requirements, to conduct sustainability-related risk analyses, and measure and report on the environmental performance of their portfolios, among other things (Green Digital Finance Alliance, 2022^[95]).

SME demand for sustainable finance is driven by value chain considerations and the need for competitiveness

SME demand for sustainable finance is driven by the need to adapt to changing consumer demand in favour of green and sustainable products, emerging regulatory requirements that directly or indirectly impact SMEs. As enterprises also take into account the potential negative impacts of climate change on their outputs, human resources, and other factors material to their operational and financial performance, they are also more likely to invest in reducing their own carbon footprint.

Net zero investments can reduce costs and boost SMEs' operational and financial performance

The net zero transition can offer SMEs opportunities to reduce costs, boost productivity and gain competitive advantages in existing and new markets, which, in turn, can drive SMEs' demand for net zero investments and finance. This also holds true for the sizeable opportunities offered in the field of eco-entrepreneurship and eco-innovation.

But even without launching new products or moving into new markets, SMEs and entrepreneurs can potentially improve their business performance by realising efficiency gains and cost reductions through greening their products, services and processes: 68% of SMEs indicate that costs saving is the primary motivator for resource efficiency actions (European Commission, 2015^[96]). Numerous studies have indicated that the cost savings potential of SMEs is in the range of 10% to 30% of their energy demand (IEA, 2015^[97]). Given the rapidly rising energy prices in the wake of the war in Ukraine in 2022, action on SMEs' resource and energy efficiency has become even more urgent. The necessary cost reductions can be achieved in several ways, including by optimising current processes or introducing new ones; re-designing products to reduce required inputs while maintaining the product's utility; reducing and reusing waste; reducing the cost of raw materials through recycling etc. (OECD, 2019^[98]).

Numerous initiatives are now in place to help SMEs gain greater awareness about these potential gains and to incite them to invest in greening. For example, the Solar Impulse Foundation provides a repository of over 1000 different profitable solutions that SMEs can use to green their businesses. SMEs can search through their "Solutions explorer" search engine to identify the most relevant and effective solutions for their own business. The solutions range from reusable/biodegradable packaging to sustainable materials for production process, sustainable energy solutions, energy efficiency solutions and tools for measuring and monitoring carbon emissions. They are described in detail and accompanied by facts and figures on their environmental and financial benefits (Solar Impulse Foundation, 2022^[99]).

Opportunities for eco-entrepreneurship and innovation can drive SME demand for sustainable finance

The net zero transition will entail a profound economic and social transformation, which relies in turn upon significant technological, product and process innovation by eco-entrepreneurs and eco-innovators. The net zero transition is also prompting the development of new services, which can help governments, enterprises and individuals in the transition journey. Among others, batteries and energy storage, bio-fuels, carbon removal, capture and storage technologies as well as renewable energies as a whole will play a critical role in mitigating the carbon emissions and driving the move towards a net-zero economy (McKinsey, 2022_[100]). This transformation provides opportunities for significant growth in SME eco-entrepreneurship and eco-innovation driving the development of sustainable finance, particularly equity financing and other alternative sources of SME finance, including from Fintech companies.

Rising consumer demand for sustainable products incentivises SME investments in greening

Evolving consumer demand is an important factor that affects the demand for sustainable finance. About half of SMEs indicate that their main motive to offer green products and services is consumer demand (European Commission, 2018_[101]) and hence commercial benefit, as consumer surveys conducted prior to the pandemic and the war in Ukraine suggest that two-thirds of consumers are willing to pay more for green products (Nielsen, 2015_[102]). These commercial benefits can be even greater if there is potential to secure intellectual property rights on green products or services, which creates a competitive advantage in the green marketplace (Koirala, 2019_[103]). This effect might be particularly strong in the clean tech sector, where exclusive ownership of a technology allows for commercialisation across multiple organisational channels (OECD, 2013_[104]). A recent study in the UK also found that messages focused on new opportunities have a strong appeal to SMEs and entrepreneurs and can be powerful mechanisms to incite them to green their businesses (British Business Bank, 2022_[105]).

This factor is contributing to growing interest in SMEs to obtain sustainability-related certificates and to report voluntarily on their sustainability performance even when they are not required to do so. Many SMEs can choose to obtain sustainability-related certificates or make commitments to achieving net zero, through initiatives such as the SME Climate Hub. They may also have already taken steps to achieve net zero through reduction of emissions and/or offsetting emissions through buying certified carbon credits. For example, between 1999 and 2020, non-financial reporting among SMEs grew by 12%, and by more than 17% between 2018 and 2020 alone, according to data from the Global Reporting Initiative (Krawczyk, 2019_[105]).

Regulatory requirements impact SMEs directly and through their participation in value chains

Policy and legal tools are also important drivers for SMEs' demand for sustainable finance and investment. Historically, environmental regulations have been important drivers of SME adoption of sustainable practices. Numerous studies have shown that SMEs tend to be more reactive (rather than proactive) when it comes to the adoption of environmental standards and practices as they seek to avoid fines and reputational impacts from non-compliance (Baah et al., 2021_[106]). In a recent survey of EU SMEs, compliance with regulations and standards was identified as the biggest incentive for building a sustainable business model, as indicated by 90% of survey respondents (Eurochambers, 2022_[107]).

Even though most SMEs are currently not subject to obligations to integrate ESG practices or measure and/or report on their sustainability performance, their participation in domestic and global value chains of large enterprises will be an important incentive to spur sustainability actions, measuring and reporting. For instance, some large companies based in the EU have already begun cancelling contracts with SMEs that are unable to report on their sustainability performance in response to the EU's recently adopted Corporate

Sustainability Reporting Directive (CSRD) (SMEunited, 2022^[108]). It can also be expected to increase SMEs' incentives to invest in reducing their carbon footprint. Likewise, some large companies, are now requiring their suppliers to disclose emissions by setting and monitoring SBTI-aligned carbon reduction targets (GSK, 2022^[109]).

Environmental standards can also be a driver for SME demand for sustainable finance

The development of environmental and social standards has grown rapidly in the past few decades, driven by increased activity in this sector by both public and private organisations. The International Trade Centre (ITC) recorded 50 different sustainability standards in 1997 and over 200, 20 years later (ITC; EUI, 2016^[110]). Public standards are usually mandatory, enacted by national regulations, and are often based on international guidelines and principles (e.g. UN Forum on Sustainability Standards, the UN Global Compact, the OECD Due Diligence Guidance for Responsible Business Conduct, the IFC's Performance Standards, the EU Sustainability Reporting Standards, the EU Strategy for Corporate Social Responsibility, etc.). Private standards take the form of voluntary sustainability standards (VSS) or corporate responsibility (CSR) and are introduced by companies, industry associations or private initiatives (e.g. ISO 26000 Standards on Social responsibility, ISO 9000 in EU Directive on CE marking, Fairtrade, Forest Stewardship Council, etc.).

When SMEs are able to meet sustainability standards, they can benefit from higher profits and improved business opportunities (World Bank, 2017^[111]). As such, standards can be an important driver of SME demand for sustainable finance. For instance, given rising consumer demand for environmentally friendly products, SMEs can have access to more lucrative markets. In fact, certifications and standard compliance can enhance SMEs' brand reputation in local and foreign markets to which they have limited access compared to large firms (Sommer, 2017^[112]). In some cases, the implementation of standards can translate into price premiums and higher revenues for SMEs, however it depends on the governance and location of the SME in the value chain (UNFSS, 2015^[113]).

SMEs can also enjoy more stable business relationships with big companies with potential positive spill overs on the stability of sales and profits. This in turn, can further ease the implementation and compliance of environmental requirements (ITC; EUI, 2016^[110]) (UNFSS, 2015^[113]). SMEs that seek sustainable finance to integrate into sustainable GVCs can benefit from technological spill-overs and access to knowledge and skills which can allow them to adapt production processes to sustainability requirements and implement technological transformations more easily. They can also become more productive and competitive as their relationship with lead firms grow. Technical assistance and capacity building from buyers are crucial for productivity improvements (UNFSS, 2015^[113]) (Sommer, 2017^[112]).

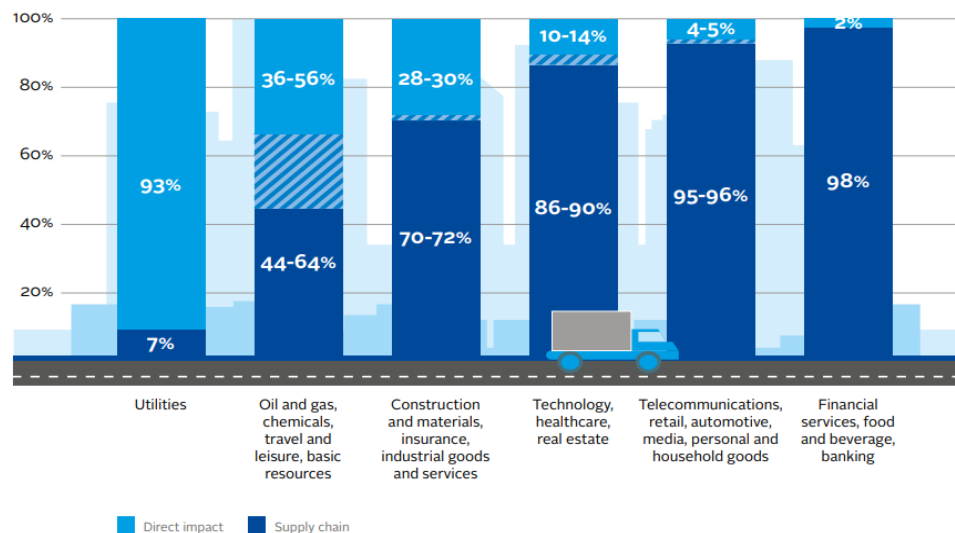
Managing reputational risks is a driver for investment in greening

The need to manage reputational risks is a source of demand for green investment and financing. Survey data from the World Economic Forum found that most SMEs explicitly prioritise societal impact objectives in their company mission, as they found it important to enhance their reputation. With the same objective, SMEs also sign up to green certifications such as the UN Global Compact or become a B Corp-certified corporations (World Economic Forum, 2021^[114]). In a recent survey of Canadian entrepreneurs and SMEs, 30% of the enterprises cited brand image as their primary driver for investing in sustainability (Business Development Bank of Canada, 2021^[115]).

Reputational risks are also indirect drivers for SME demand. Increased consumer scrutiny, coupled with higher disclosure requirements, is pushing large corporations to invest in better tracking of their supply chains as well as to be increasingly discerning about where and how they source their inputs. This has implications for environmental performance expectations of SMEs in their value chains. Given the large share of emissions that come from their value chains (Figure 2.1), corporations are increasingly moving from procurement processes that focus on pricing and transactional relationships to more holistic

approaches taking sustainability factors into consideration (Thomson Reuters, 2022^[115]). Frontrunner SMEs, too, can influence the ESG performance on other SMEs in their value chains.

Figure 2.2. Share of sectoral environmental impacts coming from value chains vs. direct operations



Source: UN PRI <https://www.unpri.org/download?ac=1894>

Managing physical risks entails investments in climate adaptation

SMEs face considerable climate-related physical risks and a high share of SMEs consider these risks to be very important. According to a survey conducted by the Zurich Insurance Group, over a third of SMEs consider the risk of material damage and about a quarter noted the risk of business interruptions as the biggest risks associated with climate change. European SMEs were particularly concerned about flood risk, US SMEs fear most the health impact on their workers. In Latin America the primary concern are the impacts of heavy rainfall, while in Asia business interruptions are considered the main threat (Zurich Insurance Group, 2016^[116]).

The risks of interruption and business closure are generally elevated for SMEs relative to large enterprises due to SMEs' relatively limited human and financial resources (Bannock 2005, Ingirige et al. 2008). In addition, as evidenced by the recent pandemic, the resulting temporary and permanent business closures can result in income and job losses with significant economic and social impact on the local level.

Therefore, over the medium to long term, SMEs will not only have to reduce their carbon footprint in order to limit the continued global rise in temperatures, but they will also need to adapt and build resilience to the inevitable impacts from existing climate change.

Personal conviction can be an important driver for eco-entrepreneurs

Many eco-entrepreneurs are driven by the conviction that stewardship of the planet is critically important and climate action is urgently needed. In a recent BDC survey, 84% of Canadian SMEs and entrepreneurs stated that environmental protection is their responsibility, and over half have incorporated environmental aspects into their companies' mission statements. Over 60% of Canadian entrepreneurs cited personal conviction as their main driver for undertaking green investments (Business Development Bank of Canada, 2021^[116]). Similarly, in a recent survey by the Korean Chamber of Commerce and Industry (KORCHAM) nearly 60% of Korean SMEs stated that the green transition will be difficult but is a must (Korea Chamber of Commerce and Industry, 2021^[22]).

3 What constraints hold back the supply and uptake of sustainable finance by SMEs?

The supply and uptake of sustainable finance for SMEs is constrained by traditional barriers to finance, as well as specific obstacles

Many SMEs face longstanding barriers in accessing finance. Not only do they have limited access to capital markets, but they also face difficulties in obtaining finance from commercial banks and other lenders stemming mainly from the presence of asymmetric information between financial institutions and SMEs, and agency problems related to these asymmetries. However, even when these enterprises have access to finance, they face relatively poorer financing conditions, including higher interest rates and collateral requirements (Koreen, Laboul and Smaini, 2018^[117]).

SMEs face additional challenges in accessing sustainable finance. Sustainability considerations play an increasingly important role in financing decisions of financial institutions; yet SMEs experience challenges in both integrating environmental considerations into their operations as well as in measuring and reporting on their environmental performance. This can put them at a relative disadvantage in accessing sustainable finance.

The supply of finance is also impacted by SMEs' limited demand for sustainable finance. As discussed in more detail in the following sections, there are considerable demand-side constraints to SME sustainable finance that primarily stem from knowledge, awareness and capacity gaps. In the absence of strong demand from SMEs, financial institutions may not be incentivised to develop or expand the range of SME-tailored greening products and services.

Lack of data related to SMEs' environmental performance limits their ability to access sustainable finance

Financial institutions and other investors need to have access to sustainability-related data and metrics in order to integrate these considerations into investment decisions and risk management. Depending on the disclosure requirements that FIs and investors face, these data may pertain not only to the direct impacts of their own operations, but also to the operations of their clients and investments.

Financial institutions can rely on client data they collect as well as on data provided by third party providers (BlackRock Financial Markets Advisory, 2021^[118]). However, in both cases, SME-related data is more scarce or difficult to access. SMEs are generally not required to report on their non-financial performance; in some countries only listed SMEs will have to provide such disclosure. Likewise, few ESG rating providers assess SMEs specifically, and SMEs are underrepresented in ratings among the major ratings providers (OECD, 2020^[119]). And although voluntary reporting, certifications and other means of communicating

SMEs' environmental performance are on the rise, they are still employed by relatively few SMEs due to the associated costs. Despite representing over 99% of all businesses in OECD countries, only 10-15% of companies using the GRI Sustainability reporting Standards are SMEs (ESG Investor, 2021^[120]).

Financial institutions also face challenges when they try to use alternative approaches that do not require collection of data from SME clients. Using top-down approaches that use sector-level data to estimate firm-level emissions doesn't deliver sufficiently granular information to support decision-making. Where artificial intelligence is used, transparency presents an issue.

Data reporting is a challenge for SMEs

In some countries, notably the EU member states, regulatory requirements are changing, and mandatory non-financial disclosure is expected to include listed SMEs by 2030. In this context, considerable concerns have been raised about SMEs' capacity to meet reporting requirements. Data scarcity is, therefore, likely to remain a challenge for SMEs in the near term.

Consistency and comparability across companies is another important challenge for financial institutions, investors and ratings providers alike. Sustainability data and ratings rely mainly on data that is self-reported or proxy data that is not verified or audited, and this can raise questions about the objectivity, comparability and reliability of these data with largely negative implications for SMEs. In the current context, the quality of these data reflects to some degree the capacities of companies to adequately measure and report on their environmental performance and greening actions, and this likely disadvantages SMEs relative to large enterprises. Similarly, in the absence of verification and auditing, this can allow for considerable "greenwashing", particularly among larger enterprises, which not only have a larger overall footprint but also can invest the resources in gaining a better understanding of how to boost their ratings independent of actual performance. The lack of comparability also impacts financial institutions' ability to aggregate data for their own reporting requirements.

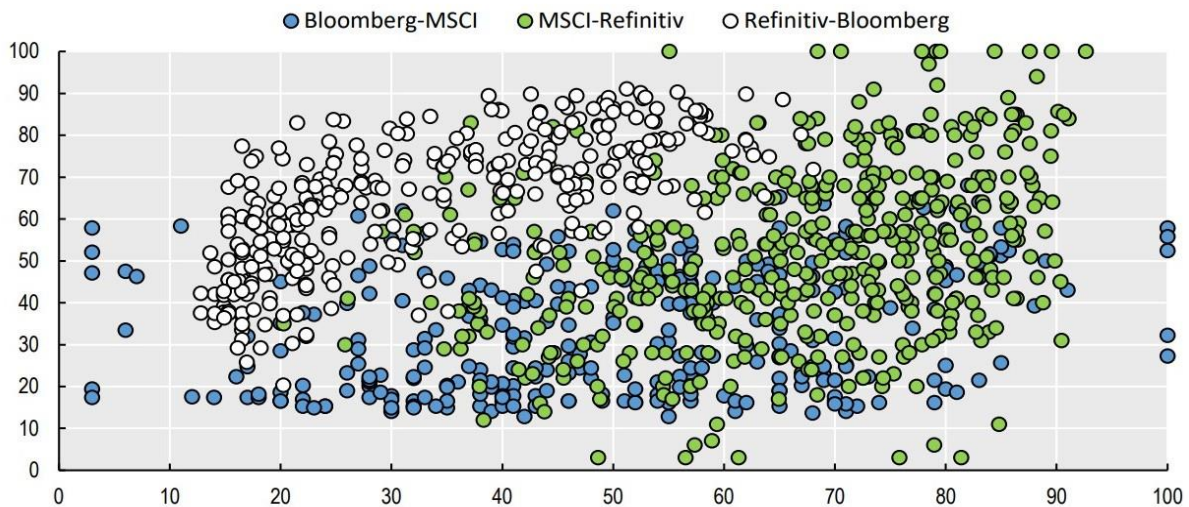
Methodological issues can discourage FIs' ESG integration, with implications for the supply of sustainable finance to SMEs

There is currently no standard way of defining and measuring environmental sustainability. Sustainability-related integration methodologies can differ considerably in how they measure performance and the weights they place on different inputs. According to one estimate, there are currently over 1000 different metrics for calculating the environmental sustainability score across an estimated 140 providers globally (Carney, 2021^[121]; Impact Investor, 2021^[122]). Moreover, even among the main ratings providers, sustainability scores vary considerably, so a single company can have vastly different ratings depending on the provider (Figure 4.1) (OECD, 2020^[119]). The lack of transparency in how different data inputs are measured and how the scores are calculated across different providers makes it difficult to discern the relative quality of the assessments. All of these challenges have implications for the growth of the pool of sustainable finance, including the supply of financing for SMEs.

The lack of common or interoperable definitions, standards and methodologies for incorporating sustainability factors into investment decisions presents an important challenge for financial institutions. Public and private banks and other financial institutions are developing their own methodologies to assess sustainability-related risks and opportunities, which not only provides room for discrepancies and potential "greenwashing" of banks' performance, but can also discourage their swifter action toward aligning their portfolios with net zero, including their SME operations. This also has implications for SMEs' access to finance, in that this lack of consistency makes it even more difficult for SMEs to explore sustainable finance options outside those offered by their main financing provider, because this creates a potential additional switching cost.

Figure 3.1. ESG ratings differ considerably between rating providers

S&P 500 ratings correlation for different providers



Note: Providers' names in the legend correspond to the Y axis when at the left and to the X axis when at the right (e.g. Bloomberg (blue), MSCI (green) and Refinitiv (white) on Y axis and MSCI (blue), Refinitiv (green), Bloomberg (white) on X axis). Data from three leading rating providers (Bloomberg, MSCI, Refinitiv) with OECD Staff calculations. For full methodology, refer to source.

Source: Boffo and Patalano (2020), ESG Investing: Practices, Progress and Challenges, OECD Paris

ESG ratings might disadvantage SMEs

ESG ratings measure not only exposure to climate-related risks, but also enterprises' actions to mitigate those risks. This means that ESG ratings providers take into account climate-proofing and emission reductions, which can often entail policies and plans for future action in addition to measures of current performance. This aspect of ESG reporting and measurement is important but more challenging to assess objectively. It is also more likely to be correlated with efforts put by companies into the reporting process, which advantages larger enterprises. This, for example, can explain how high emitters that are demonstrating plans to reduce their emissions and thus mitigate ESG-related risks, may score more highly on ESG considerations than SMEs that have a lower carbon footprint (OECD, 2020^[8]). This also likely explains the fact that ratings are positively correlated with enterprise size (OECD, 2020^[8]). This potential bias can have important implications for the cost and allocation of sustainable financing to SMEs.

Enterprise size- and sector-related specificities may warrant different approaches to the measurement and calculation of ESG scores, but this can create challenges for SMEs. For example, some ratings providers have so-called transparency scores, which are determined based on how enterprises perform on disclosure relative to the median level for their industry group (Refinitiv, 2021^[123]). This suggests that SMEs in industries where the disclosure median is high are more likely to be penalised for their relatively weaker disclosure capacities compared to SMEs in other industries.

The fact that ESG also incorporates social and governance considerations, which can be incongruous with environmental considerations, adds an additional layer of complexity for the use of ESG ratings, especially for SMEs. One important implication is that SMEs' performance on the S- and G-pillars respectively can potentially drag down their overall ESG score with implications for access to and cost of financing. Research has shown several potential reasons for SMEs' relatively poorer performance on social and governance issues, such as resource, knowledge and technical constraints of SMEs (Nunes et al., 2019^[124]). Another broader potential implication is that the relative weights placed on E, S and G factors can impact the extent to which capital allocation is aligned with climate objectives. As noted above, these

weights can vary significantly between ESG providers and also across industries and enterprise sizes within the same provider, especially for the E- and S- pillars (Refinitiv, 2021^[123]).

Compliance challenges impact SME access to resources

As noted in the section on the drivers of sustainable finance, compliance with sustainability standards can increase SME sales, and facilitate access to lucrative markets and to sustainable finance. However, when SMEs are not able to meet such standards, they are excluded from accessing markets and resources (Sommer, 2017^[112]). In China, for example, SMEs that are not able to comply with environmental standards are unable to secure contracts with large international buyers and failing to continue standard compliance is a reason for contract termination. This affects SME access to supply chain finance as the bank lend to SMEs on the basis of future payments with large firms. In South Africa, environmental standard adoption from SMEs is positively correlated with access to finance. When requesting loans, commercial banks trust SMEs that comply with standards given its associated benefits, such as price premiums, larger orders and access to exclusive markets. As a result, when SMEs are not able to comply, banks are less encouraged to lend to SMEs (Sommer, 2017^[112]).

SMEs face a number of difficulties in adopting sustainability standards. The main barrier relates to the incremental costs given the changes in production processes and technical knowledge that is required to comply (ITC, 2016^[125]). In fact, implementation and certification costs are often perceived as extremely high by smaller firms (ITC, 2016^[125]).

The existence of a large number of standards and the lack of coordination between them poses additional difficulties to SMEs, as they need to invest time and resources to collect and analyse information to know which standard to implement. In some cases, standards lack transparency about content, requirements and verification steps, which imply further transaction costs to SMEs. Another difficulty relates to the lack of interoperability of some international standards with other local standards that consider specific local environmental and technical conditions. Given the lack of harmonization, SMEs need to meet parallel procedures which increase even more compliance costs (UNFSS, 2015^[113]). This situation is exacerbated when standard compliance becomes mandatory instead of voluntary. Even if voluntary, within specific markets, market forces render voluntary standards de facto mandatory. In other cases, legislations reference private voluntary standards, making them legally binding (Sommer, 2017^[112]).

SME demand for sustainable finance is constrained by limited knowledge, capacities and reluctance to invest in the face of uncertainty

Decarbonisation, adaptation and building resilience in the face of climate change will require significant investment and capacity building. This presents challenges for enterprises of all sizes, but they are particularly acute for SMEs. Some of the critical challenges that SMEs are likely to face in the green transition are discussed in the following sections.

Information and awareness related barriers are high among SMEs

A lack of information and awareness of opportunities, environmental regulations and support options can constitute a significant barrier for greening efforts by SMEs and entrepreneurs. They may lack knowledge of current and upcoming policy requirements, possibilities and opportunities to reduce resource use and available financial or advisory support measures to assist them. This lack of awareness and information is a feature of wider analysis of barriers and drivers of SME performance, but receives particular emphasis in the environmental domain, in part because of the perceived technical and economic complexity of the domain. For instance, SMEs are often unaware of many financially attractive opportunities for

environmental improvement. There is a widespread misperception that protecting the environment is associated with technical complexity, burdens and costs (OECD, 2018^[126]).

However, in practice, even when well-informed, owner–managers of small firms are ‘struggling to bridge the gap between their environmental attitudes (aspirations) and their environmental behaviour (practices). In many cases, the business case may be clear, for which informing SMEs on opportunities and obligations is important. However, for environmental improvements by some (and potentially large) groups of SMEs, the business case may be less clear-cut, and hence go beyond information problems.

SMEs also face high technological, market and regulatory uncertainty

One of the greatest barriers that SMEs face in the green transition is uncertainty. This uncertainty can stem from technology, markets, and policy and regulations, as well as the impact of climate itself (ITC, 2021^[127]).

Technical uncertainty often arises from questions about the technical feasibility of adopting new innovations and solutions, as well as their potential implications. SMEs often do not have technical expertise and have questions about the functionality, usefulness, or quality of new innovations and how they can improve the performance of the business. This uncertainty leads to an under-investment by SMEs.

Market uncertainty is frequently identified as one of the main barriers to greening in surveys of SMEs and entrepreneurs. SMEs often view environmental measures as reducing profits while simultaneously presenting uncertain market benefits even if there is considerable evidence to the contrary. For many SMEs, greening will likely have a net cost and therefore “greening” can be viewed with scepticism. This obstacle is typically greater for SMEs, and is also a major hurdle for eco-entrepreneurs since they typically need to build a market for a product that does not yet exist (OECD, 2013^[104]). In Korea, 60% of SMEs and entrepreneurs consider that the net zero transition would negatively impact their competitiveness over the near term, and 15% consider it even a threat to their existence (Korea Chamber of Commerce and Industry, 2021^[22]). In the UK, about 30% of SMEs have cited feasibility as their top constraint to green investment, while in Canada SMEs cite their perceived inability to profitably provide affordable green products, services or processes as one of their top three obstacles for greening (British Business Bank, 2021^[15]; Business Development Bank of Canada, 2021^[16]).

Policy and regulatory uncertainty can also be an obstacle to greening since policy volatility can contribute to market uncertainty. This is particularly true for eco-innovation and eco-entrepreneurship. Moreover, while regulation is considered a powerful driver for environmental innovation, environmental regulation is often more arduous for SMEs than for larger firms (Brammer, Hojmosse and Marchant, 2012^[128]) since they have fewer resources to dedicate to navigating a complicated regulatory system that may require certifications and compliance inspections. For resource efficiency actions, complexity of administrative procedures is the most cited difficulty for European SMEs (34%) to undertake actions to reduce their environmental footprint (European Commission, 2021^[17]).

Capacity and resource constraints affect SME demand for sustainable investment and finance

SMEs willing and capable of adopting sustainable practices and seizing green business opportunities generally face size-related resource constraints, skill deficits and knowledge limitations (OECD, 2018^[126]). Even when SMEs are aware of the potential of better environmental performance to improve a firm’s competitiveness, a lack of appropriate skills and expertise commonly prevents firms from acting upon win-win opportunities. In the EU, 23% of SMEs flag lack of expertise as a difficulty to becoming resource efficient. At the same time, the lack of resources often leads to SMEs being risk-averse and less willing to invest in new technologies, partly because of the uncertainty about the payback period. For instance, SMEs may be less able than larger firms to access environmental technologies to reduce emissions, either

because of frictions in capital markets, or because of economies of scale in the adoption of environmental technologies. SMEs may also lack the expertise or information on such new technologies. Like in other technology domains, SMEs developing environmental innovation may face challenges in finding capital and in access to government support schemes. Government policy to support the transition to more climate and environment-friendly societies may be more costly to access for small producers than for larger ones. Finally, the availability and development of new technologies, for instance in digitalisation, may affect the internal barriers that SMEs face in environmental issues and their ability to address them.

Out of 175 identified barriers to sustainability in SMEs, resource-based barriers (lack of resources, high initial capital costs and lack of expertise) were the most important (Álvarez Jaramillo, Zartha Sossa and Orozco Mendoza, 2019^[129]). Cost of environmental actions, lack of supply of required inputs, and lack of expertise are among the top difficulties faced by European SMEs. Organisational constraints also hold back the green transition of SMEs (De Haas et al., 2021^[130]). Further reflection on the more specific or generic nature of resource-related barriers for SMEs in dealing with environmental challenges and opportunities seems important, because it may shed light on whether these resource constraints for SMEs in the environmental domain require specific policy attention (OECD, 2021^[20]).

Evidence on environmental innovation reveals the need to further research resource-related barriers for SMEs. Some studies point out that resource-related barriers for environmental innovation for SMEs are both larger and more widespread than for SME innovation at large (Pinget IREGE and Bocquet, 2014^[131]). Technological capabilities such as R&D and human capital foster conventional innovation in SMEs but not green innovation (Cuerva, Triguero-Cano and Córcoles, 2014^[132]). Furthermore, SMEs face important constraints related to their ability to identify and measure their carbon emissions and sustainability performance. In order to reach carbon net zero, SMEs need to eliminate or significantly reduce the emissions from their own operations (so-called Scope 1 and 2 emissions), reduce upstream or downstream emissions from their entire value chain (scope 3 emissions) and offset emissions that cannot be eliminated (Box 1). To do so, SMEs need to identify, measure and reduce the sources of their emissions across their entire value chain. This process is complex and resource-consuming for all enterprises, but particularly for SMEs which have more limited staff, skills, financing and other resources to devote to this endeavour.

The green transition will also entail the monitoring and reporting on the environmental performance and steps taken to improve it, which, requires resources and capacities that many enterprises, particularly micro and small enterprises do not have. This is mainly due to the fact that administrative costs for SMEs tend to be the same or similar to those of large companies, hence affecting SMEs disproportionately. Likewise, while large companies can more easily afford to have dedicated ESG roles internally or hire external consultants to support them in complying with regulatory requirements, for SMEs it is often the entrepreneurs who deal with these tasks, diverting their valuable resources away from other business operations (European Commission, 2017^[64]).

4 Public support to foster SME access to sustainable finance

Policies have a key role to play in supporting sustainable finance for SMEs

Governments and public financial institutions have traditionally played a key role in addressing externalities that impact SME access to finance. By providing direct financing as well as mobilising private financing through guarantees and other de-risking instruments, these actors have been facilitating SMEs' access to external financing and thereby supporting SMEs' investment, productivity and growth. The role of public institutions will also be critical in the context of SMEs' green transition, as SMEs with relatively limited internal financing will need to make considerable investments entailing high upfront costs.

SMEs face the same challenges to access sustainable finance as they do for traditional finance, as reflected in long-standing OECD data collection and monitoring work on SME finance through the OECD SME Financing Scoreboard and the 2022 Updated G20/OECD High-Level Principles on SME Financing (OECD, 2022^[133]). But these challenges are compounded by additional supply- and demand-side constraints, some common to all companies and some specific to smaller ones (see Chapter 3). Because sustainability considerations are taken into account in the investment decision, sustainable finance is imposing additional demands on SMEs, in terms of requirements to measure, report and take actions to reduce their carbon footprint. In cases where finance is not utilised for green investments, SMEs' access to finance may also be subject to assessment of the enterprise's overall sustainability performance. As elaborated in more detail in Chapter 3, the variety of methodologies and their potential bias against SMEs, SMEs' disclosure-related capacity constraints, and the effect they have on their ESG scoring, all negatively impact their ability to access sustainable finance. Demand-side constraints related to knowledge- and capacity limitations also affect SME demand for sustainable investment and finance.

The policy and regulatory landscape is changing very rapidly in light of the urgency to act on climate change. The design of policies and measures - including their ambition, clarity, credibility and implementation - will strongly determine the pace of the green transition and the incentives for boosting the demand for and supply of sustainable finance for SMEs. This includes policies that are designed specifically to address challenges impacting SMEs' access to sustainable finance, policies aimed at incentivising SMEs' investment in greening and broader regulations and policies related to sustainable finance markets, ESG data and ratings regulations.

Governments and public financial institutions provide SMEs with various forms of financial support in order to help accelerate their green transition. Structural support for greening SME and entrepreneurs was in place even before the crisis brought about by the COVID-19 pandemic, as a result of recognition that climate change warrants urgent policy action. Greening policies have received an additional boost in the post-COVID recovery packages, which have been seen as vehicles for "building back better." However, the share of SME-specific policies among all greening policies in the recovery packages remains relatively limited. According to *Financing SMEs and Entrepreneurs 2022: An OECD Scoreboard*, the financial value of programmed SME-targeted support for greening represents only 2% of the value announced for all

greening policies. Such limited emphasis on SME greening in recovery packages is confirmed by the OECD Green Recovery Database (OECD, 2021^[134]) and the Green Recovery Tracker from the German Wuppertal Institute (Wuppertal Institute and Third Generation Environmentalism, 2021^[135]). The recovery packages that include SME related policies to support greening do so through grants and loans and focus on eco-innovation and start-ups, as well as energy saving, the circular economy and hydrogen. Additional measures are therefore likely to be needed to ensure that SMEs can contribute fully to the green transition (OECD, 2022^[136]).

Various instruments can be used to provide financing support for SMEs' green transition

Direct financing

Public lending schemes for SMEs are the most commonly used direct financing instrument. Direct lending is provided through specialised public banks that are focused on SME finance (e.g. the British Business Bank, the Business Development Bank of Canada, the Industrial Bank of Korea) or through government-sponsored entities that can provide lending to SMEs (e.g. the US Business Administration). It can take the form of direct issuing of SME loans or it can entail the provision of credit lines for on-lending through private financial institutions (e.g. microloans). These lending schemes can be designed to target specific types of investments, including investments for greening or scaling up green solutions. As discussed in Chapter 1, lending to SMEs can be extended through a range of different instruments including concessional loans, bridge loans, revolving credit, etc. PFIs can also channel financing obtained through the issue of green bonds to SMEs through various forms of credit.

Public lending schemes can promote sustainable investment by SMEs; for example, concessional loans, also referred to as soft loans, offer reduced interest loans for environmental investments by SMEs. For instance, in Germany, as part of the programme Climate action campaign for SMEs, loans with low interest of up to EUR 25 million are offered. Depending on the purpose of the loan, the SME has to provide documents, such as a carbon footprint assessment or an assessment plan certification (KfW, 2020^[137]). With the New Green recovery financing, Norway government offers fast-track loan financing for Nordic SMEs to help them go ahead with their plans to scale up green solutions on global markets (Nopef, 2020^[138]). The Canadian government green loan aims to help business owners pay for renewable energy sources, update machinery or equipment to make operations more efficient, or invest in water salvaging and sanitation systems (Canada Start-ups, 2021^[139]).

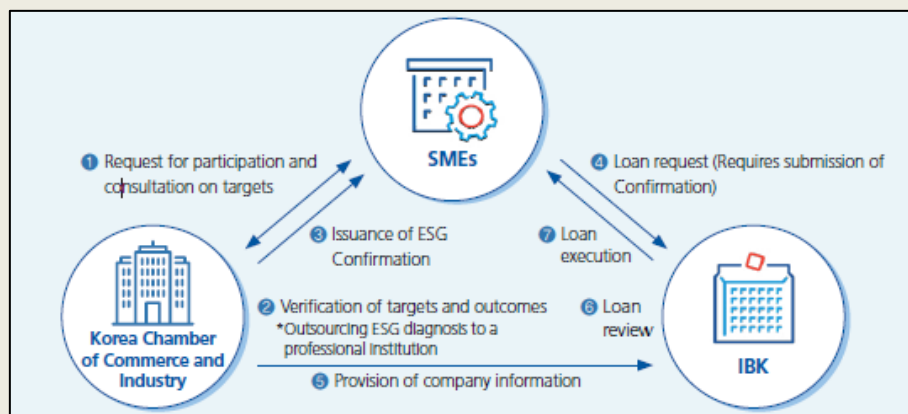
In Scotland in 2021, as part of the Zero Waste Scotland programme, the government offer loans to SMEs providing interest-free loan funding of up to GBP 100,000 for a variety of energy efficiency improvements, such as insulation, heating or double glazing (Energy Saving Trust, 2021^[140]). Korea also offers concessional loans for sustainability (see Box 4.1).

Box 4.1. Concessional loans for sustainability: the case of Korea

In 2022, Industrial Bank of Korea (IBK) launched the ‘Loan for Successful ESG Management’ jointly with the Korea Chamber of Commerce and Industry (KORCHAM). The purpose of this product is to induce SMEs’ active participation in adopting ESG principles into their management practices. This is the first Sustainability Linked Loan (SLL) product to be made available in Korea.

To qualify, participating companies will be subject to an ESG gap assessment and consultation. Based on the assessment result, they will be required to set Key Performance Indicators (KPIs) and Sustainability Performance Targets (SPTs) and submit them to KORCHAM. After verifying the ESG performance level of participating companies, KORCHAM issues ESG confirmations of varying grades. IBK, based on the confirmation issued, will offer a reduction of the interest rate by up to 1%p. At the point of roll-over, the interest rate is re-adjusted based on the company’s performance against the KPIs and SPTs, for which relevant data is submitted along with the loan extension application.

Loan for Successful ESG Management’ Product Flow Diagram



Source: IBK Sustainability Report, 2022

Non-debt financing for SMEs, such as equity can also be used by governments to mobilise finance to small business, particularly for new, innovative and fast-growing companies with a higher risk profile. These entrepreneurs and SMEs need substantial funds to finance green projects with high growth prospects, but their future earnings are often difficult to forecast and thus they are unlikely to be able to obtain bank credit. These financing constraints can be especially severe in the case of start-ups or small businesses whose business model relies on intangibles (e.g. green intellectual capital), which despite their contribution to firm profitability and competitive advantage (Chen and Chang, 2011^[141]), are difficult to use as collateral in traditional debt relations (OECD, 2022^[142]) (OECD, 2015^[61]).

The availability of equity financing for greentech and other sustainable investments is growing. In recent years, the number of newly established sustainable venture capital (VC) funds has been rising, and existing VC funds have been growing their sustainable investing portfolios. Governments around the world have also increased the amount of public funds to mobilise equity capital towards green objectives (ASEAN, 2019^[63]).

For instance, through the France Relance Recovery Plan, launched in 2020, the French government will invest EUR 3 billion in equity for green or sustainable SMEs and mid-size companies (Reuters, 2020^[143]). In the United Kingdom, GBP 11 million were deployed specifically to fund energy entrepreneurs. Government investment stocked the latest round of the Energy Entrepreneurs Fund (EEF), which seeks

to drive innovations from SMEs in new clean technologies and reduction of carbon emissions with the aim to support UK zero emissions target (UK Government, 2021^[144]).

In Belgium, the Walloon SME finance and guarantee company Sowalfin has been implementing the Easy Green programme which aims to accelerate the transition of SMEs towards a low-carbon economy. The programme invests up to EUR 3 million per SME to, for example, improve energy efficiency in buildings or carry out eco-innovation projects. For eligible projects half of the financing is provided by Sowalfin in the form of a capital contribution, while the other half comes as private equity from investors (Sowalfin, 2022^[145]).

Equity instruments have also been used by supranational institutions to support SMEs in their green transition. For example, the EIF, as implementing partner of InvestEU, set its goal to deploy EUR 6.5 billion via venture capital and private equity to address SMEs' financing gaps. A key area of investment focuses on Climate and Environmental solutions, specifically on R&D, upscaling and commercialisation of technologies in the areas of "climate mitigation and resilience (adaptation), mobility and transport, urban and built environment, water and marine resources, pollution, circular economy, agri-food system and biodiversity and environmental ecosystems" (EIF, 2022^[146]).

Non-debt financing can also take the form of grants. Grants can be used to support eco-entrepreneurs that are seeking to develop and grow their innovative green ideas. They are particularly well suited to support technologies that are further away from the commercialisation stage. They can also be used to incentivise eco-adoption of greening technologies that can have broader environmental and social benefits.

In Denmark, the government has allocated grant funds to increase Danish Green Exports and support export-oriented SMEs to mitigate risks linked to the green transition. The EKF Green Accelerator was launched in October 2020 targeting SMEs or alliances between SMEs and larger companies with already mature export solutions. The Accelerator provides grants to help realizing ESG reviews and overcoming bottlenecks that hinder green exports. The Accelerator reimburses 70-80% of the projects, with a total budget available of DKK 85 million (EKF, 2021^[147]).

In France, the Agency for the Environment and Energy Management (ADEME), supports projects aimed at developing own research (industrial research and experimental development) through grants. SMEs receive a premium on their eligible costs due to their small size. Generally, the more upstream the project is in R&D, the higher the grant rate will be within the limits of the co-financing rate (ADEME, 2022^[148]).

For companies incorporated in India, Singapore, Hong Kong, Taiwan, and Indonesia, the DBS Foundation launched a grant programme (up to SGD 10,000) to SMEs that seek to adopt innovative sustainable practices. The issuance is conditional on the capability of businesses to propose solutions to reduce energy consumption and waste, or develop sustainable supply chains (DBS Foundation, 2022^[149]).

As part of Ireland's National Recovery and Resilience Plan (2021-2026), Enterprise Ireland offers a range of instruments to help SMEs decarbonise. The instrument GreenPlus under the Climate Planning Fund for Business grants funding for 50% of the costs for developing the companies' climate change plan and alignment to international standards. Eligible costs to be reimbursed include training through external experts in areas such as Financial review and planning as well as salary costs for 50% of the project for up to 10 company green project team members (Enterprise Ireland, 2022^[150]).

In the United Kingdom, as part of the Mayor of London New Green Deal Fund, SMEs will receive GBP 390 000 in grants (up to 15 000 per business) to launch circular economy pilot projects. SMEs will also benefit from free expert advice on how to incorporate circular economy into the business model (ReLondon, 2021^[151]).

In the United States, the Small Business Innovation Research programme provides grants to small businesses or individuals who can form a small business within the required application timeline. Grants

are competitively awarded for the development and commercialization of new ideas and innovative research (R&D) (Office of Energy Efficiency and Renewable Energy, 2022^[152]).

Hybrid financing instruments are gaining increased attention in the post-COVID period as a means of recapitalising the SME sector. A 2021 study conducted at the EU level concluded that a hybrid capital instrument, ideally guaranteed by an EU entity, that delivered equity accounting treatment as well as tax deductibility, could provide the scale to deliver cost-efficient capital that would not require relinquishing control of the company, which is a major concern for many SMEs (AFME, 2021^[153]). Other hybrid instruments, such as convertible loans (i.e. loans are converted to equity once specific stipulations in the loan agreement are met), can also be used to support the financing of SMEs' green transition without further raising the debt burden on SMEs.

In Germany the Climate Action campaign for SMEs, comprise a climate grant that is paid directly to the company, which is set at up to 6% of the loan amount. The "up to" indicates that state aid legislation may be relevant in determining the actual grant amount (KfW, 2020^[137]).

The EIB has also used quasi-equity to fund smaller innovative green technology SMEs. Loans are provided to early-stage companies for the period between equity funding rounds. Eligible companies should be in commercial stage, seeking financing between EUR 5 to 50 million and, among others, develop technologies in future mobility, clean energy, decarbonisation, circular economy, etc. Major advantage of the quasi-equity financing through the EIB, is the non-interference in the founders' ownership and the positive signalling effect through which the EIB support helps to attract additional investors (EIB, 2022^[154]).

Mobilising private sector financing for SMEs

Public entities can leverage public funds to mobilise private financing for SME's green investment. Unlocking private capital is critical given the magnitude of the financing needs and gaps. As discussed in the previous chapters, private banks and other financial institutions may not see a favourable risk/return ratio in lending to SMEs. The public sector can mobilise more private financing for SMEs by either absorbing some or most of the risk that private financial institutions face when lending to SMEs or accepting a lower return for joint transactions. This can be achieved through instruments such as guarantees.

PFIs, IFIs and other public institutions can also leverage their support to promote a more diversified offer of SME-oriented financing. Both public and private banks are in the early stages of integration of sustainability considerations into their operations. While banks offer green financing instruments, their use of more innovative products such as ESG-linked loans or transition loans are predominantly in the early stages and not yet mainstreamed. A study in the EU found that these types of instruments are offered by only a small subset of banks and are mainly viewed as growth opportunities by the surveyed banks. The integration of ESG factors into the full range of products and services offered by banks, including off-balance sheet exposure, is still not in place for most private as well as public banks (BlackRock Financial Markets Advisory, 2021^[118]).

Public credit guarantee schemes (PCGSs) are the most common instrument for mobilising debt financing for SMEs, and they have considerable potential to mobilise finance for sustainable investment as well as to reduce the cost of capital of green projects. Credit guarantees are especially instrumental in offsetting the informational asymmetries between borrowers and lenders as they absorb the risk of lending to SMEs. Financial institutions have higher incentives to provide the financing the company needs, as the risk of non-repayment in the case the company fails, is shared between the financing bank, the PCGS and the state. Although the coverage of credit guarantees varies largely among countries in the European Union most of the credit guarantee coverages ranges from 60% to 80% (AECM, 2019^[155]).

Credit guarantees that include environmental objectives as one of the criteria to support SMEs and entrepreneurs, can effectively incentivise financial institutions to finance green market segments. For example, credit guarantees can be an optimal way to channel finance to eco-adopters considering the

large upfront costs they face when they undertake sustainable investments. Similarly, credit guarantees can be useful to reduce the private sector's risk of investments to eco-innovators. Although these types of enterprises rely mainly on equity instruments to finance their operations, they also benefit from hybrid instruments and as such, can benefit from green credit guarantees. Credit guarantees that incorporate climate objectives are increasingly used around the world as a mechanism to mobilise sustainable and green finance for SMEs (Box 4.2).

In order to mobilise lending to SMEs through private institutions, PFIs have also launched guidelines to standardise sustainable lending requirements. Such guidelines have the objective to provide private banks with clear rules on what is required from them to channel sustainable finance, and it also holds them accountable for how they provide funding to SMEs (GPFI, 2017^[156]). Some PFIs have used international benchmarks, such as the IFC Performance Standards, to design the guidelines (Germany), while others have designed their own assessment system for lending (Turkey).

Box 4.2. Examples of credit guarantee schemes aimed at mobilising green finance for SMEs

Green credit guarantees

The Sustainability Portfolio Guarantee Product, implemented by the EIF under the InvestEU programme, strives to enhance access to debt finance for SMEs investing in the European economy's green and sustainable transformation. In comparison to market's standard products the EIF Sustainability Guarantee offers preferential conditions to Financial intermediaries, such as a high guarantee coverage rate of up to 70% and a maximum transaction amount of 7.5 million when private financial intermediaries finance SMEs. Eligible to apply for the guarantees are "Sustainable Entreprises" (e.g., working with clean-tech related technology or received an eco-label from EU labelling scheme) or "Green Investments" (such as SME's investment in energy efficiency or sustainable use of materials) (EIF, 2022^[157]).

The Energy Efficiency Loan Scheme (EELS) offered by the Strategic Banking Cooperation of Ireland (SBCI) was established to counteract the relatively low energy efficiency levels of Irish SMEs. To support viable SMEs including fishers and farmers, the EELS offers an 80% capped portfolio guarantee to lending banks as well as preferential conditions such as reduced interested rates and extended repayment period of up to 10 years (SBCI, 2022^[158]).

Similarly, the French National Promotional Bank Bpifrance offers Green Guarantees as part of their Climate Plan. The Green Guarantees are provided for individual business projects as well as in the form of portfolio guarantees, e.g. to reduce environmental impacts and improve energy performance of SMEs. The Green Guarantees cover 80% of the loan amount, up to a maximum risk commitment of 1.5 million Euros (Bpifrance, 2022^[159]).

On June 2021, the **Government of Sweden** launched a special credit guarantee for green investments. The programme will facilitate loan offerings to companies that contribute to reaching the goals of the environmental objectives system and climate policy framework. To qualify to the guarantee scheme the company needs to show how the investment contribute to the environmental objectives according to the European Commission Green Taxonomy as an evaluation tool (Swedish National Debt Office, 2021^[160]).

In **Bulgaria, the Energy Efficiency and Renewable Sources Fund (EERSF)** include a credit guarantee facility and a consulting company. In addition to providing credit guarantees, they offer technical assistance. The Fund also directly finances or co-finances projects in energy efficiency. The EERSF operations is a public-private partnership (Energy Efficiency and Renewable Sources Fund, 2004^[161]).

In **Korea, the Government**, in conjunction with **the Korea Energy Agency, Korea Credit Guarantee**

Fund and the Korea Technology Finance Corporation, launched the Green Guarantee Program for SMEs that operate in the New and Renewable Power Generation sector or in the New and Renewable Energy Industry. The Program aims to provide liquidity support and incentivise capital expenditures in green facilities and technologies by guaranteeing up to 95% of the loan amount (Korean Ministry of Trade Industry and Energy, 2021).

In **Mexico**, the **FIRA** (Fideicomisos Instituidos en la Relacion con la Agricultura) promotes financing by granting loans and providing guarantees and technical assistance to MSMEs that contribute to the sustainability of Mexico's agricultural sector. It has pioneered in the mobilization of finance from capital markets as it issued the first green bond to include protected agricultural projects, and efficient water use in the international scene (ALIDE, 2017^[162]).

The **Asian Development Bank** launched in 2021 the Blue SEA (Southeast Asia) Finance Hub. One of the objectives of the hub is to upscale SMEs operating in ocean health projects in Indonesia, the Philippines, Thailand, and Viet Nam by pooling together resources from ADB, ACGF, and co-financing partners. The plan is to finance projects worth USD 300 million by 2024 with the goal to crowd-in at least the triple amount of capital from other investors (ADB, 2022^[163]) (ACGF and ADB, 2022^[164]). One strategy to attract private finance consists in the development of financing instruments to de-risk investments, namely blue bonds, blue credits for avoided costs and first loss guarantees (ADB, n.a.^[165]).

The **African Guarantee Fund for SMEs (AGF)** has granted a portfolio guarantee line for a total amount of 2.5 billion FCFA to Société Générale Burkina Faso to support SMEs, women's entrepreneurship, and the green economy in Burkina Faso (GhanaWeb, 2022^[166]).

Public institutions also have an important role to play in supporting the development of green capital markets and facilitating SMEs' participation in them. Bonds typically have to be of a relatively large size to be attractive for institutional investors, which is challenging for small-scale projects and issuers. This can result in these projects being inaccessible to large investors, resulting in higher cost of financing. Governments can support better access to capital markets through the aggregation of bonds, which in turn can be done through warehousing, standardisation of contracts or issuance of green covered bonds. Countries can also allow for issuance of small or "mini bonds" by unlisted SMEs (European Commission, 2016^[167]). Many EU countries have created platforms or allow for the issuance of mini bonds including the UK (London Stock Exchange), Italy, Germany, Nordic countries (Nordic ABM), France, Spain, etc.

Financial incentives

Financial incentives can also be used to support SMEs seeking to build more sustainable business models. The high upfront costs and low short-term returns of sustainable investments pose considerable financial challenges for SMEs. According to a recent survey, 45% of SMEs agreed that financial incentives are the most helpful form of support they can get for investing in green products or services. This marks an increase of 10 percentage points in the share of respondents selecting this answer since 2015. Access to finance is also considered the best incentive for SMEs to offer green products or services if they do not do so already. These incentives are more important for SMEs in identifying potential markets than technical support or assistance (European Commission, 2018^[101]). Research on German SMEs shows that high investment costs impede the adoption of energy efficiency measures by SMEs, even if these measures are deemed profitable (Fleitera, Schleich and Ravivanpong, 2013^[168]).

Financial incentives most often take the form of subsidies, tax breaks, higher coverage rates, lower fees, etc. They provide incentives for sustainable investment and the demand of sustainable finance by reducing the financial burden or risk that enterprises face in making these investments. Given the important societal gains from these investments (i.e. improved environmental and climate outcomes), there is a case to be made for public spending on such incentives. For example, evidence on the impact of R&D subsidies on

Chinese energy-intensive firms shows that green innovation performance – measured as the number of used green application patents – increased by over 50% after firms received R&D subsidies. The impact was especially strong for SMEs that performed substantially better (Bai et al., 2019^[169]).

Green subsidies are used to stimulate the transition to net zero. Subsidies differ from grants in that they are specifically used by governments to help SMEs offset the high upfront costs that entail the implementation of green technologies, while grants are sums that can be used for different purposes and not specifically to offset costs. Subsidies may be offered as a share of consultancy costs for the identification and implementation of resource efficiency and other environmentally oriented measures. Sometimes the government reimburses SMEs the full cost of an initial environmental audit. Subsidies can also be used to reduce training costs for firms that lack the in-house knowledge to make their operations more sustainable, they can take the form of vouchers to ease access to training programmes or promote workplace training.

For instance, the Ecology Premium programme in Flanders, Belgium is a subsidy provided to enterprises that invest in environmental technologies. Investments that are considered environmentally friendly are eligible for support as long as they concern purchases from third parties under market conditions. The size of the subsidy depends on the environmental performance of the technology, measured by an environmental performance factor. This performance factor is a qualitative indication that ranges between 0.6 and 1. The Flemish Department of Economic Support Policy has composed a list of environmental technologies and their performance factors. When a company applies for a subsidy to finance a technology that is not on the list, its potential environmental impact must be assessed. SMEs can receive a subsidy with a maximum of 35% of the investments made (it can be higher if the company is certified according to ISO 14001 or EMAS) but cannot exceed EUR 3.6 million (Hoevenagel et al., 2007^[170]).

Another case in point is the grant scheme by France's Environment and Energy Management Agency (ADEME) which subsidises up to 50% of the costs of environmental audits covering both compliance and resource efficiency. The German public bank (KfW) has a "Special Fund for Energy Efficiency in SMEs" which covers up to 80% of costs for SMEs to receive professional advice on energy efficiency improvements (Miller et al., 2011^[171]). In June 2022, the German Development Bank also provided a EUR 3 million grant to the Development Bank Ghana (DBG) to promote the sustainable development of the Ghanaian SMEs.

Tax breaks have also been used as a way to incentivise SMEs' acquisition of resource efficiency technologies and the improvement of the sustainability of their operations. Evidence has shown that tax incentives for R&D investments can help to increase R&D expenditures significantly among SMEs (European Commission, 2012^[172]). The different design features of tax incentives influence the extent to which SMEs, start-ups and young firms make use and benefit from tax credits (OECD, 2021^[173]). In fact, since it is large firms that often carry out R&D expenditures, governments may target most of their tax incentives to SMEs who have more limited investment capacities (OECD, 2002^[174]). Considering that clean-tech investments also entail high upfront investments, tax breaks can be instrumental to incentivise expenditure in this area. In the United Kingdom, for example, the Green Business Fund and the Enhanced Capital Allowance scheme gives tax breaks on energy and water efficient technologies including on electric or hybrid cars to SMEs to incentivise investments (Natwest, 2020^[175]).

In many OECD countries, entrepreneurs are allowed to take tax exemptions – deduct certain categories of environment-related investments that go beyond environmental compliance from the taxable corporate income for a defined period of time. Similarly, the government may offer tax incentives – accelerated depreciation, reduced property or corporate taxes – for the purchase of new environmental technologies and other environmental investments. Tax reductions or exemptions can also be differentiated based on the actual environmental impact of the investment.

For example, in the Netherlands, two tax reduction schemes have been implemented to promote the purchase of new environmental technologies: the Arbitrary Depreciation of Environmental Investments (VAMIL) allows accelerated depreciation of newly purchased environmental technologies listed by the

government, and the Environmental Investment Allowance (MIA) allows a partial write-off of an investment in environmental technology against tax. In France, the government uses accelerated depreciation and reduced property and professional taxes to stimulate purchases of renewable energy and energy efficient equipment. As an example, the Research Tax Credit which aims at incentivizing businesses to spend money on innovative research has been extended since 2013 to cover certain innovation investments by SMEs.

Another example is the tax preferences (e.g. reductions in the local corporate tax) for cleaner and climate-friendly technologies launched by the Japanese government. However, environmental tax incentive schemes tend to benefit larger companies, which are better informed about the existence of such instruments (OECD, 2015^[176]).

Non-financial support for SMEs

PFIs and other public institutions, private banks and non-governmental initiatives also have a pivotal role to play in providing non-financial support for SMEs and entrepreneurs. Non-financial services, in the form of advice, consultancy and education, are crucial as part of the policy mix. They can help SMEs and entrepreneurs strengthen their ability to understand the steps needed to green their businesses and help them allocate financial resources appropriately.

PFIs, as well as private financial institutions, are increasingly providing sustainability-related technical support, practical tools and education to entrepreneurs and SMEs in order to incentivise their transition to net zero. Many governments and PFIs have established online hubs with tools and resources that can help SMEs to understand, measure and mitigate their carbon footprint. They also provide SMEs with data and information on the financial and other support they can tap into when taking their actions toward improved sustainability (Boxes 4.3 and 4.4).

Box 4.3. Sustainability-related non-financial support

Canada: The Business Development Bank of Canada is leveraging the B-corp assessment as a means of incentivising SMEs' action toward sustainability (Annex B).

Denmark: The Danish Business Authority in collaboration with the Danish Energy Agency have launched a digital carbon footprint calculator (the Climate Compass), which is targeted at SMEs. With the Climate Compass, SMEs can access a free, authoritative tool to calculate their emissions in compliance with the GHG-protocol that is continuously updated by the Danish authorities with the newest available data (State of Green, 2022^[177]).

France: BPI France recently launched its Green Volunteer Programme, with the aim to deploy more human resources to provide guidance and support to SMEs on their green transition. Bpifrance also provides SMEs with online training, as well as practical tools to help them diagnose their carbon footprint and the actions they can take to reduce it (Bpifrance, 2020^[178]).

UK: The British Business Bank has established a demand development function that seeks to provide data, information and instruments that are impactful for SMEs and can incentivise their green actions (BBB, 2018^[179]). The BBB also has an online Finance Hub to direct SMEs to digital resources and information on these topics (BBB, 2019^[180]).

Hungary: The European Investment Bank (EIB) and Magyar Fejlesztési Bank (MFB), developed co-operation in 2021 to help MFB's advisory unit provide advisory services to Hungarian project promoters. MFB's advisory unit will also focus on supporting the recovery and green investment activities of key economic players such as SMEs (EIB, 2021^[181]).

The European Commission's Covenant of Companies for Climate and Energy (CCCE) is an initiative to support SMEs in **Croatia, Finland, Italy, the Netherlands** and **Poland** with free technical assistance

in energy auditing, types of financing mechanisms and available technologies to mitigate their environmental footprint (European Commission, 2022^[182]).

Box 4.4. SME consulting services for sustainability: Support from the Industrial Bank of Korea (IBK)

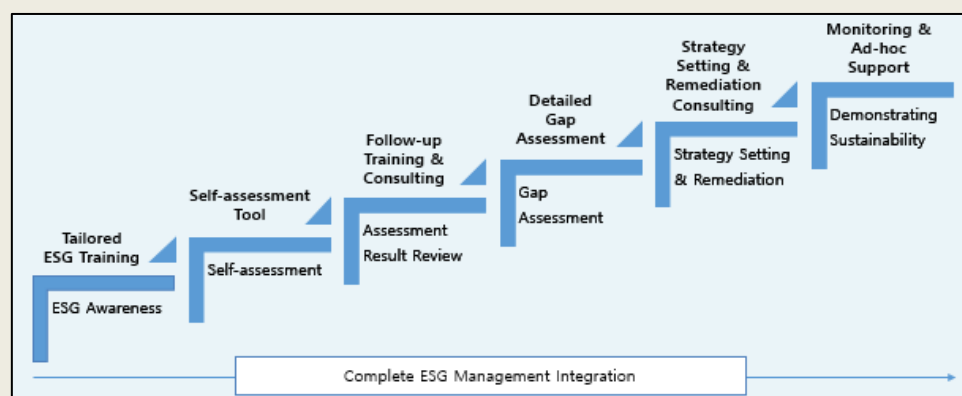
IBK Consulting for Sustainable Growth of SMEs

Since 2011, IBK has been providing consulting services for SMEs to fulfil its policy role of fostering and nurturing SMEs. Currently, IBK has approximately 50 full-time consultants, including a team of dedicated ESG consultants. IBK's consulting services are being provided free of charge to assist SMEs that have difficulty accessing advice on business strategy as well as on various other affairs including ESG, human resources, labour, tax, and M&A. By the end of 2021, the cumulative number of consulting services provided was 10,287.

ESG Management Consulting for SMEs

IBK operates the 'ESG Doctor for SMEs,' a comprehensive consulting program to diagnose and consult SMEs on ESG-related matters. The Program assists SMEs by providing specific strategies concerning 'when,' 'for whom,' and 'what and how' ESG management should be implemented from the perspective of SMEs. The Program consists of various elements ranging from raising ESG awareness of its SME customers to assisting them in demonstrating the sustainability of their ESG management program to various stakeholders.

IBK's ESG Consulting Program for SMEs



Source: 2022 Sustainability Report (p.90)

International initiatives are also providing important non-financial support for SMEs' net zero transition. The SME Climate Hub, for example, provides a one-stop-shop for SMEs and entrepreneurs equipped with key tools and information related to their net zero transition. The hub also seeks to incentivise SMEs to start their net zero journey through the so-called SME climate commitment which entails committing to halving emissions by 2030, achieving net zero by 2050 and disclosing progress on an annual basis, all supported by the Hub's tools, data and guidance. The Hub's tools thus also include support for disclosure and reporting in line with SME commitments.

There is also a growing private net zero ecosystem that supports SMEs in their decarbonisation and sustainability reporting endeavours. Various companies have developed tools to support SMEs in calculating and reporting on their carbon footprint. Some of these services are provided by other

entrepreneurs and provide more comprehensive and tailored assessments and other support services. Others are free (e.g. Normative) and provide simple methods of assessing SMEs' carbon footprint, identifying key sources of emissions and suggesting ways of reducing them (Normative, 2022^[183]). With origins in New Zealand, CoGo, now also present in the United Kingdom, is working with financial institutions around the world to help them transition their clients to net zero through the provision of relevant tools within their banking apps (CoGo, 2022^[184]). Likewise, many new platforms are emerging that enable the purchase of verified carbon credits and facilitate SMEs' reaching of net zero (e.g. CIX Project Marketplace, Project Carbon) (Climate Impact X, 2022^[185]; Reuters, 2022^[186]).

In the United Kingdom, the Carbon Trust has launched the Carbon Footprint Calculator to help SMEs measure their corporate emission footprint following the GHG Protocol Guidance, including Scope 1 and 2 emissions. Although the tool is not a complete evaluation of an organisational footprint, it includes selected emission sources common to the majority of SMEs (Carbon Trust, 2022^[187]).

In 2021, the Green Industry Platform launched a dedicated SME support centre to help SMEs develop resource efficiency strategies and implement actions through an online portal. The portal aims to bring a wide range of guidance and support services from leading organisations and experts on resource efficiency. Some of the resources available include case studies, technical guides and online tools. In the future it will also include training solutions, technical assistance and financial incentives (Green Industry Platform, 2021^[188]).

Tailoring support to SMEs' diverse needs

There is a broad recognition that SMEs are a highly heterogeneous group with diverse needs and pathways to net zero depending on their intrinsic characteristics and the sustainable activities they can undertake. Therefore, there is a growing interest among policy makers and practitioners to understand better the different sustainability-related drivers and needs of SMEs and to tailor SME-oriented policies accordingly.

For example, a British Business Bank (BBB) study developed an SME net zero 'transition journey' framework (TJF) to assess awareness and engagement, knowledge and capabilities, and physical actions undertaken by smaller businesses. The BBB identified four main SME "net zero personas" based on meaningful business characterisations - business size (i.e. number of employees), sector, estimated emissions intensity, and their so-called transition maturity (defined as the combination of awareness about net zero, knowledge and capabilities and actions taken and planned/considered to reduce carbon footprint). The mapping most notably found that there can be a sizeable difference in transition maturity between enterprises of similar size and operating in similar sectors and these reflect factors such as awareness and prioritisation of net zero, knowledge and capabilities and steps already taken towards net zero. These differences may thus warrant different approaches from policy makers, with finance proving a particularly attractive tool for small enterprises with relatively high emissions and transition maturity.

Similarly, the BBB has analysed the messaging that appeals to SMEs and can incite their actions toward net zero. It found that messages regarding SMEs' collective impact or the promise of cost reductions resonate less with UK enterprises and are less likely to drive change. Conversely, messaging focused on the small, initial steps that SMEs can take to start their net zero journey was much more powerful as was the message on the new opportunities that the net zero transition offers (Annex A.)

Strengthening the sustainable finance ecosystem

Considering the many actors in the sustainable finance ecosystem, PFIs have also tried to promote networks among entrepreneurs at different stages of their sustainability journey as well with financial institutions, policy makers, investors, and consultancy companies. For example, Bpifrance recently launched the E day (E Jour in French) with the objective to convene and share knowledge among green entrepreneurs, and public and private actors. The event included masterclasses and workshops on technical themes to enable the green transition, as well as meetings with green-tech entrepreneurs and

diagnosis sessions to build climate roadmaps (Bpifrance, 2021^[189]). Private foundations have also created dedicated events on different themes, such as the circular economy, climate mitigation, biodiversity, sustainable supply chains, convening a wide range of actors from public and private institutions to share knowledge and solutions with SMEs (Ellen Macarthur Foundation, 2022^[190]).

International initiatives to support SME access to green finance

In addition, policy efforts and initiatives from international institutions are working to foster sustainable finance for SMEs. For example, the Executive Agency for Small and Medium-sized (EASME) created by the European Commission aims to help create more competitive and resource efficient European economy based on knowledge transfer and innovation. The EASME manage the Sustainable Industry Low Carbon Scheme, and is part of the EU programme for the Environment and Climate Action, the European Maritime and Fisheries Fund and the legacy of the Intelligent Energy Europe programme and the Eco-innovation initiative.

The Asia-Pacific Economic Cooperation (APEC) established a working group that developed a strategic plan 2021–2024 for SMEs' development in the Asia-Pacific region. As its key objective the working group highlights SMEs' access to global value chains, finance and alternative financial solutions. To foster SMEs' competitiveness and access to international markets, they promote green awareness among businesses and to support green SMEs (APEC, 2020^[191]). Moreover, in September 2022 the APEC's Ministers responsible for SMEs urged its member states to accelerate SMEs' access to sustainable finance (APEC, 2022^[192]).

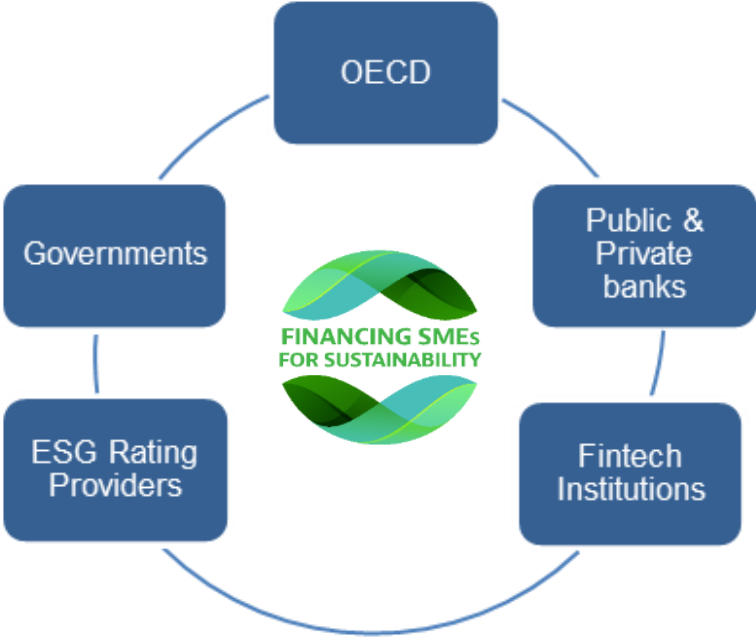
In Latin America, the Green Finance Latin-American Platform has been developed to support National Development Banks and private financial institutions to share knowledge on Green Finance. Currently it has 12 initiatives in partnership with the Inter-American Development Bank to promote sustainable instruments including on Financing the Circular Economy on SMEs (Green Finance Latin American Platform, 2022^[193]).

The working group on Innovation of the Pacific Alliance, has created the programme on Innovation for Sustainability with the objective to help entrepreneurs in eco-innovation to grow and develop. The Programme has also the objective to help SMEs be competitive by implementing sustainable practices (Cisneros, 2019^[194]).

The G20 launched the Sustainable Finance Working Group (SFWG) that focuses on several areas related to sustainable finance, including greening the banking system; greening bond markets; greening institutional investment; risk analysis; and measuring progress. In June 2022, the SFWG met under the Indonesian G20 Presidency. Key points discussed included the development of a framework for transition finance and improving the accessibility and affordability of sustainable finance instruments to SMEs (G20 Indonesia 2022, 2022^[195]).

The OECD Platform on Financing SMEs for Sustainability, launched in November 2021, contributes to efforts to reduce the barriers to SMEs' demand and supply of sustainable finance. By convening key stakeholders from the SME sustainable finance ecosystem (public and private financial institutions, SME associations, policy makers, etc.), the Platform fosters knowledge sharing and policy dialogue whilst also advancing the data and analytical work on SME sustainable finance in order to accelerate SMEs' transition to net zero (Figure 4.1). The Platform aims to develop and share recommendations and best practices, as well as promote and coordinate research to further obtain comparable information on SME access to green finance (OECD, 2021^[196]). This work will build upon the work of the CSMEE and complements other relevant OECD work and guidance, including on sustainable finance and investment, transition finance, corporate governance and others.

Figure 4.1. Actors in the OECD Platform on Financing SMEs for Sustainability



Furthermore, in the context of the work of the CSMEE, with input from the Platform, a dedicated principle on SME access to sustainable finance is included in the 2022 Updated G20 OECD High-Level Principles on SME Financing. This update contributes to shaping SME sustainable finance policies within the G20 and OECD.

5 Conclusions and policy considerations to foster sustainable finance for SMEs

Conclusions

Sustainable finance has a critical role to play in facilitating SMEs' transition to net zero. Access to finance is one of the key constraints that small business and entrepreneurs face as they seek to adopt eco-friendly practices or engage in eco-entrepreneurship or innovation. When it comes to accessing sustainable finance, SMEs are faced not only with the traditional constraints that limit their access to funding or increase the cost of financing. They also face obstacles related to their ability measure and report on their sustainability performance or access to ESG ratings used by many investors and finance providers for this purpose. Ensuring that SMEs have access to affordable financing that is fit for their sustainability-related needs is an important priority for policy makers seeking to accelerate the business sector's net zero transition.

The financial sector already faces considerable incentives to increase the pool of sustainable finance for SMEs as well as large enterprises. Investors are increasingly demanding evidence that their investments are financing environmentally friendly enterprises and projects. Regulators are beginning to introduce mandatory disclosure requirements related to enterprises' environmental and climate performance. In the case of financial institutions, these requirements can include mandatory reporting on the environmental performance of their financed portfolios, including their SME operations. The increased piloting of climate-related stress testing exercises by financial stability regulators is another incentive for allocation of more financing toward investments with better climate performance. Last but not least, many regulators are mandating the introduction of sustainability-related functions to oversee the net zero/green transition of these enterprises. Policy makers will thus have to tailor their support to address specific constraints and externalities that may disadvantage or prevent SMEs for tapping into this growing pool of sustainable financing. This can entail providing direct financing to affected SMEs and entrepreneurs or utilising instruments such as guarantees to mobilise more private sector financing for these enterprises.

Boosting SME demand for sustainable finance and investment is another important priority in light of the fact that many SMEs still face considerable knowledge and awareness gaps with regard to the net zero journey and how to embark on it. There are significant drivers pushing SMEs to adopt green practices, decarbonise their operations or to engage in eco-innovation in order to gain comparative advantages in the evolving market: consumer demand for sustainable products and services is growing rapidly as is investors and shareholders' demand for enterprises' improved sustainability performance; there is growing evidence that improved environmental performance can lead to better financial performance over the medium to long term; there are reputational implications for enterprises that continue to operate in highly polluting or carbon-emitting activities; etc. And even though SMEs are not yet required to report on their environmental performance, they are increasingly impacted by regulatory requirements imposed on larger enterprises operating in their value chains, or on the financial institutions that are financing their investments. Yet, despite these drivers, evidence shows that many SMEs still lack an awareness of the concrete steps they need to take to decarbonise their operations or invest in sustainable products and practices. The provision of non-financial support aimed at filling these knowledge gaps will be key to support SMEs net zero transition.

Public and private financial institutions and other financing providers can develop or adapt existing debt and non-debt instruments to finance SMEs' sustainable investments. They can utilise green instruments to provide financing with more favourable conditions compared to the market or other SME support instruments in order to facilitate SMEs' investments in greening. They can also adopt the use of sustainability-linked instruments whose financing conditions vary depending on the sustainability performance of the underlying investment or investee. In addition to providing direct financing to SMEs, PFIs can also use risk-sharing instruments, such as green credit guarantees, to mobilise more financing from the private sector. These instruments can be adapted to provide even stronger incentives for financing sustainability-related projects, by offering more favourable conditions (e.g. higher coverage rates).

Financial institutions, policy makers and other actors in the ecosystem also have an important role to play in providing SMEs with non-financial support to help them embark and stay on the path to net zero. As elaborated in the report, there are considerable knowledge- and capacity- related constraints that are moderating SME demand for sustainable finance and investment. The provision of non-financial support therefore must go hand in hand with the provision of financing.

There are a number of policy and regulatory considerations that can boost SMEs access to and uptake of sustainable finance:

Despite considerable drivers, a number of supply- and demand-side constraints persists. There is therefore considerable scope for public actors, including policy makers, regulators, public financial institutions and others, to support both SMEs and finance providers to overcome these constraints. This section provides some considerations for policy makers and other public actors:

SME-related instruments and policies

SMEs need to have access to a range of tailored sustainable finance instruments that can accommodate their diverse needs and net zero transition pathways. Given the considerable barriers that impede SMEs' access to finance, some of which are further exacerbated in the context of sustainable finance, public institutions will need to continue to play a critical role in ensuring that SMEs have access to such financing. Financing instruments can take the form of direct financing through PFIs (e.g. grants, direct lending, etc.) or facilitating private financing through guarantees, subordinated debt and others. In light of SMEs' increased indebtedness in the wake of the COVID pandemic and the energy crisis, governments should also consider the use of equity or hybrid instruments. Such instruments can provide financing without further increasing SMEs' debt burden. Supporting the development of green capital markets and SME engagement in these markets is another important priority over the long term that can facilitate the diversification of SMEs' financing sources.

Just as important, SMEs need access to non-financial support in the form of training, tools, information portals, etc., to help them better identify and measure their environmental performance and identify steps that they can take to embark and advance on the green transition. Where tools are already in place, public institutions can help to raise SMEs' awareness and use of these tools. Public institutions can also develop tools internally or engage in partnerships with private initiatives or other non-governmental actors to make use of externally developed tools and services. Public institutions can also leverage private initiatives, such as certifications and standards, to incentivise SMEs' voluntary reporting and undertaking of concrete actions toward sustainability.

Strengthening data collection

Timely and granular data on environmental outcomes, as well as on SME needs and capacity constraints, are crucial to inform the development of policies and support measures. Research, data collection and

engagement of relevant actors in the ecosystem are important to ensure that policies are informed by evidence and tailored to the needs of different SMEs, taking into account potential differences related to geographic location, size, gender of the owner and other relevant characteristics. In this context, the development of the pilot dashboard on SME greening and greening entrepreneurship indicators, a CSMEE undertaking, can contribute to shed light on lags or advances in reducing the SME environmental footprint, for example in relation to GHG emissions or energy consumption, and direct efforts towards high-impact areas. It is also important to improve granularity of SME finance data, such as through the international data collection efforts underlying the OECD SME Financing Scoreboard, which is currently piloting the collection of more disaggregated data (at subnational level and by gender of the owner).

Broader regulatory considerations with implications for SMEs

Strengthening non-financial disclosure requirements is an important priority for many governments as they seek to better align economic activities with the overarching climate objectives. Such requirements are already impacting SMEs either directly (e.g. reporting requirements for listed SMEs) or indirectly (i.e. via value chains or financing). As these requirements become more widespread and begin to encompass a wider share of the SME market, SMEs' capacity to meet these additional demands should be taken into account. There are different possibilities to take into account the specificities of SMEs, such as by exercising proportionality in reporting requirements, whereby SMEs would have to report on a more limited set of core sustainability-related indicators (with due consideration not to disincentivise growth); or by providing targeted support to enable SMEs to comply with the requirements.

In the context of a proliferation of sustainability-related data, definitions, standards and methodologies, it is important to strengthen their interoperability within jurisdictions or across the multilateral system as appropriate. Some ways of approaching this challenge include:

- Using agreed international guidelines and baselines for developing or adopting standards, taxonomies and other regulatory requirements
- Increasing transparency regarding data and methodologies that private actors are using to measure and assess sustainability performance, including ESG ratings
- Promoting collaboration among financial institutions in the adoption of common standards and methodologies to facilitate SME adoption of such standards

International co-operation and engagement

Active engagement in international initiatives, such as international standards bodies, platforms and other initiatives, is important for fostering collaboration and coordination in advancing the efforts toward addressing the climate crisis. This kind of engagement can also support continuous strengthening and improving of the international baselines and guidance to incentivise more ambitious targets and actions to achieve those targets on the parts of individual governments. These international initiatives are also critical in advancing policy dialogue and knowledge sharing with the goal of bridging existing knowledge gaps and accelerating the green transition. When it comes to SMEs' transition to net zero, for example, the OECD Platform on Financing SMEs for Sustainability's objective of fostering dialogue and knowledge sharing among a diverse range of actors from the SME financing ecosystem can provide important momentum to accompany SMEs in the green transition in OECD countries and beyond.

Issues for further research

This report also identified a number of knowledge gaps and issues that could warrant further in-depth analysis by the CSMEE and the OECD Platform on Financing SMEs for Sustainability. For some of these issues, country- or stakeholder-specific studies may bring pertinent and impactful insights.

- **Better understanding and addressing demand-side constraints** will be a critical area of future work. Future studies could aim to understand the different net zero pathways for the diverse population of SMEs and entrepreneurs, and how they impact demand for sustainable finance. Studies could also look at existing or potential approaches to bridging SME knowledge and awareness gaps regarding the net zero transition, as well as tools and instruments that financial institutions can utilise to incentivise SMEs to embark on the journey to net zero.
- **Supply-side issues** include: how to address SME data gaps, the approaches taken by policy makers, public and private financial institutions, Fintech companies and supply chains to strengthen SME capacities to measure and report on their environmental performance; as well as how SMEs can gain better access to ESG ratings. Studies can also seek to understand if there are specific areas where market appetite for investing (and therefore supply) is lower than potential demand, what those areas are and how they affect SME greening.
- The CSMEE **will contribute to developing relevant surveys and other data collection exercises** under the umbrella of the OECD Platform on Financing SMEs for Sustainability in order to help bridge existing SME-related data gaps in sustainable finance. For example, in 2023 the Platform will undertake a survey of financial institutions to benchmark of how financial institutions are integrating sustainability considerations in their operations. This work will complement the ongoing CSMEE project to develop a pilot dashboard on SME greening and green entrepreneurship indicators.
- Future CSMEE work could also support **the operationalisation of the 2022 Updated G20/OECD High Level Principles on SME Financing**, in particular the principle on sustainable finance. This entails providing stakeholders with tools and advice on how to implement the guidelines entailed in the Principles.
- **Strengthening the SME sustainable finance ecosystem** is an important priority for many countries. Future work could provide tailored support to countries on developing conducive institutional, regulatory and policy frameworks underpinning the SME sustainable finance ecosystem and identifying the priorities for strengthening the ecosystem in order to boost the supply and demand for sustainable finance.
- Finally, it could be useful to continue **to monitor and map the different initiatives** that seek to enhance SME sustainable finance.

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Annex A.

Understanding SMEs' diverse needs and pathways to net zero: the approach of the British Business Bank

By considering distinctive proactive and reactive attitudes to net zero alongside other characteristics, a persona approach can help the development of targeted policy interventions. The barriers preventing action on net zero are multiple, complex and specific to the business. Based on a survey conducted in 2021 with 1200 interviews of small and medium businesses, defined as businesses with 0 to 249 employees, the BBB conducted a cluster analysis in order to identify the commonalities and differences between groups of SMEs.

Costs were the most significant barrier referenced by respondents (35%), with upfront costs being the most cited component of this at 21%. Feasibility (32%) was almost as commonly mentioned by respondents. Lack of control over actions was a key driver of feasibility concerns. For actions already taken, the most common driver by far was that it 'made financial sense' (51%), while 'keeping up with regulation' was the least cited. Lack of knowledge is affecting uptake of net zero actions, reflected in the 12% of respondents that explicitly mentioned barriers relating to information.

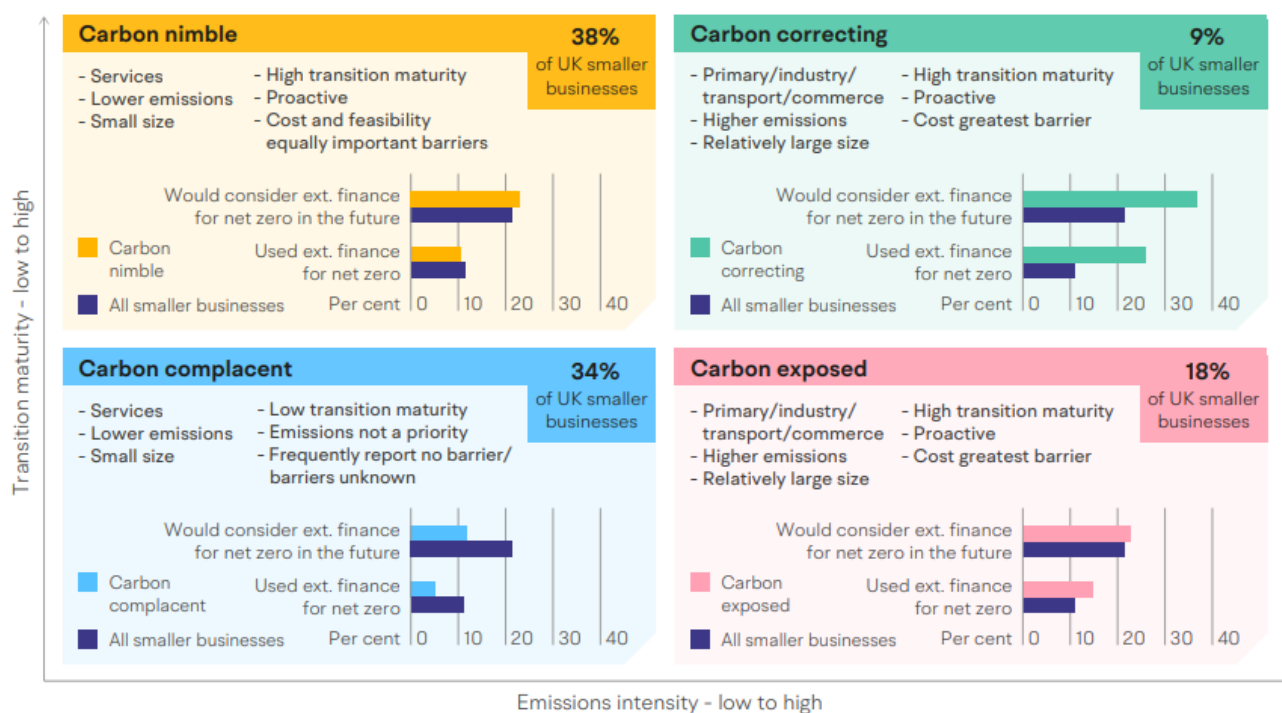
Overall, SMEs identified information, tax, external finance (including grants) and clearer standards and regulations as helpful policy levers to encourage more action by at least half of the respondents. The anomaly was training on low-carbon solutions, which most businesses perceived as less effective in encouraging more action

Identifying SME "net zero personas"

By examining which variables have the greatest explanatory power in accounting for patterns in the data, the study identified four key "personas" of SMEs characterised by their business size (i.e. number of employees), sector and estimated emissions intensity as well as their so-called transition maturity (defined as the combination of awareness about net zero, knowledge and capabilities and actions taken and planned/considered to reduce carbon footprint). These personas (see figure below) face different incentives and challenges in advancing on the net zero transition and thus may have different needs in terms of financing as well as non-financial support. Their identification can help inform the BBB's efforts in identifying priority support services (financial and non-financial) for their SME clients' green transition.

Key features of the Bank's smaller business personas and their attitudes to finance for net zero actions

Source: British Business Bank Net Zero SME Survey, 2021, n=1,200 for all smaller businesses; n=339-458 for carbon nimble; n=97-111 for carbon correcting; n=227-409 for carbon complacent; n=166-222 for carbon exposed



Understanding the net zero related messaging to which SMEs respond

The BBB also commissioned an independent analysis to understand what kind of messaging resonates with SMEs and what can incite them to begin and stay on the journey to net zero. Key conclusions that emerged from this study included:

- The message of “Collective impact of SMEs”, which highlighted how multiple small actions by SMEs can add up and to large emissions reductions in the economy, seems to rely on a sense of fraternity, which many SMEs do not recognise.
- The message of “Overcoming cost,” which focuses on reducing upfront costs and maximising benefits from net zero investment appeals to SMEs but without it, it fails to resonate without an immediate and relevant product offering.
- The message of “Small steps,” which focuses on concrete small steps that SMEs can take toward net zero seems to be a powerful mechanism to prompt action and raise the consciousness of existing actions
- The message of “New opportunities” focuses on the gains from growing the customer base and accessing new markets through greening. It offers the kind of hook that will catch the attention of entrepreneurial SMEs and drive the sense of urgency.

The BBB studies also found that:

- SMEs differ far more on their perceptions of how easy changes toward Net Zero could be compared to their perception of what changes were required
- Even when SME leaders had strong personal values, there is limited translation into actions of their business unless they are promoted by strong external pressures (e.g. customers, punitive taxes etc.)

- Once an SME has begun its sustainability journey, it becomes more open to the positive benefits of sustainability for the business

Source: British Business Bank, 2021, *Smaller businesses and the transition to net zero*.
https://www.british-business-bank.co.uk/wp-content/uploads/2021/10/J0026_Net_Zero_Report_AW.pdf

Annex B.

Leveraging certification to raise SME and entrepreneur awareness about sustainability: The experience of the Business Development Bank of Canada

The Business Development Bank of Canada (BDC) was first certified as a Beneficial corporation (B Corp) in 2013 – the first financial institution in Canada to do so. It re-certified for the third time in May 2022, with B Lab, the non-profit organization that certifies companies as B Corps and mobilizes the B Corp community towards building prosperity that is socially inclusive and environmentally responsible.

B Corp entrepreneurs are entrepreneurs who use business as a force for good, meeting high standards of social and environmental performance, accountability, and transparency. There are more than 6,000 certified businesses in 86 countries and 158 industries around the world.

BDC uses its broad reach to raise awareness of sustainability issues and help grow Canada's B Corp movement. It presents the B Impact Assessment – the world's most widely used sustainability/ESG tool for entrepreneurs – to thousands of business owners each year. It does so via awareness-raising events, B Corp 101 workshops and cohort programs such Getting to 80.