

 **TransArEEEnS**

**TECHNICAL REPORT ON KEY OPPORTUNITIES
TO ENHANCE STANDARDISED DISCLOSURE
OF EE-ESG PRODUCTS**

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Mainstreaming Transparent Assessment of Energy Efficiency in Environmental Social Governance Ratings

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Executive Summary

Improving access to long-term finance for energy efficiency projects is key to achieving the EU's climate targets, aligning the COVID-19 recovery to the European Green Deal and, further to recent developments, helping secure the EU's energy independence as rapidly as possible. As a key driver of the real economy, the EU's businesses will be fundamental in supporting the climate transition and meeting these objectives.

However, the lack of standardised data on firms' 'green' credentials limits access to energy efficiency financing. Furthermore, poor understanding of energy efficiency-related information in ESG ratings can increase the risk of greenwashing, thus preventing a smooth development of the sustainable finance market. TranspArEEnS addresses these barriers by mainstreaming a quali-quantitative framework for the standardised collection and analysis of firms' EE and ESG information, a database at firm-level with standardised information relevant to assess EE project finance risk, ESG risk and greenwashing risk, and the development of a standardised EE-ESG rating. A unique added value of this project is to cover non-listed Small and Medium Enterprises (SMEs), meeting an important market need. The infrastructure is currently being deployed in Italy, but its purposely standardised nature means that not only can it be replicated in any EU country in which an SME operates but it can be replicated across jurisdictions.

The overall significance of the TranspArEEnS infrastructure is four-fold:

- Firstly, it will afford enhanced transparency and standardisation to banks on SMEs' 'green' credentials which will facilitate the classification and assessment of these SMEs and, as a result, the assessment of their credit risk. On this basis, banks will be able to scale up their lending to SMEs, in particular their EE-ESG lending, responding to the policy objectives in the area of Sustainable Finance and the EU's overall climate objectives.
- Secondly, by responding directly and robustly to the challenge of limited information on SMEs' 'green' credentials, it will deliver significant added value in the supervisory context, by providing banks with a more robust overview of SMEs' overall risk profile, with EE-ESG data as a complement to existing financial and economic information, enabling banks to respond to existing and future supervisory expectations in this area and the myriad of EE-ESG disclosure requirements.
- Thirdly, the more robust understanding of the profile of SMEs has the potential to make an important contribution to unlocking further funding opportunities for banks, for example through European Secured Notes (ESN), offering a wide range of benefits for issuers, investors, SMEs themselves, as well as supporting overall economic recovery from the COVID-19 pandemic and contributing to future growth.
- Last but not least, with its direct link to the EU Taxonomy and its overall focus on delivering information on SMEs' EE-ESG performance and activities, the TranspArEEnS infrastructure could be instrumental over time in supporting potential eligibility of ESN bonds for 'green' asset purchase programmes. Equally, the standardisation and transparency afforded by TranspArEEnS will help banks to demonstrate the overall EE-ESG credentials of their SME loan books, supporting current access to the TLTROs, as well as future access, should steps be taken to 'green' these in the future.

By way of an overview of the regulatory and supervisory requirements banks have to meet, as well as the associated challenges and potential opportunities they encounter, on both the asset and liability sides of the business with a focus on their SME exposures, an overview of the challenges and opportunities related to the ECB's monetary policy operations, and a subsequent deeper dive into the role of TranspArEEnS in this context both now and in the future, this Report demonstrates the overall uses and value of the TranspArEEnS infrastructure for banks as lenders and issuers, investors and SMEs themselves. Significantly, it also showcases the potential of the infrastructure to regulators and supervisors in supporting their policy and monetary policy agendas and strategies in support of the climate transition.

Introduction

The European Union (EU) has set itself ambitious climate change targets further to the conclusion in 2015 of landmark international agreements with the adoption of the UN 2030 agenda and sustainable development goals and the Paris climate agreement. The scale of investment needed to meet the EU's climate and energy savings targets is estimated at more than €275 billion p.a. until 2030¹, investment which cannot be met by the public sector alone. Mobilising long-term private finance for energy efficiency (EE) projects is therefore key to achieving the EU 2030 targets and also aligning the COVID-19 recovery to the European Green Deal.

Efforts under the Energy Efficient Mortgages Initiative (EEMI)², for example, are targeted at mobilising mortgage finance via an energy efficient mortgage market 'ecosystem' to support the energy improvement of the EU's building stock, which is responsible for 40% of the EU's energy consumption and 36% of greenhouse gas emissions³.

SMEs as a driver of the economy & the climate transition

Alongside the mortgage industry which is a key driver of both the real economy and the climate transition is another crucial economic sector in this respect, namely the SME sector. On the one hand, this sector of the economy has a significant environmental footprint, contributing 60-70% of industrial pollution according to the OECD⁴. On the other hand, SMEs play a crucial role in the EU economy, representing more than 99% of all businesses, around 85% of new jobs and two-thirds of the total private sector employment before the COVID-19 crisis⁵. At the same time, SMEs also have the potential to make a substantial contribution to the climate transition through their products, services, and business practices. The OECD points out that some SMEs focus on reducing the environmental footprint of their production process, for example by implementing resource-efficient processes, while others focus on their outputs and are offering green products and services, for example renewable energy products⁶. In the specific context of the Energy Efficient Mortgages Initiative, SMEs are a fundamental element of plans to launch an energy efficient mortgage 'ecosystem' which is intended to optimise the end-to-end customer journey and experience with regard to energy efficiency renovations, deploy market interventions and partnerships that support their delivery and therefore maximise benefits for consumers. In light of the economic and environmental significance of SMEs, they are important drivers of inclusive and green growth and will be crucial to the success of the climate transition, especially in consideration of the post-pandemic recovery.

SMEs & the COVID-19 Pandemic

Although the Covid-19-induced crisis has affected all sectors of the EU economy, the impact on SMEs, when compared to their counterparts of larger size, has been particularly severe. This vulnerability characterising SMEs, which further contributed to their difficulties in terms of adaptation to the new pandemic and post-pandemic socio-economic scenario, is due to a number of factors, the most significant of which is the over-representation of SMEs in the sectors most hit by the crisis, such as

¹ https://eur-lex.europa.eu/resource.html?uri=cellar:0638aa1d-0f02-11eb-bc07-01aa75ed71a1.0003.02/DOC_1&format=PDF

² www.energyefficientmortgages.eu

³ https://ec.europa.eu/info/news/focus-energy-efficiency-buildings-2020-lut-17_en

⁴ https://www.oecd.org/greengrowth/GGSD_2018_SME%20Issue%20Paper_WEB.pdf

⁵ https://ec.europa.eu/growth/access-finance_en

⁶ https://www.oecd.org/greengrowth/GGSD_2018_SME%20Issue%20Paper_WEB.pdf

tourism, retail and professional services, construction and transportation⁷. According to the OECD⁸, SMEs account for 75% of all jobs in these sectors. Together with the difficulties to rapidly accommodate commercial demand due to slow value and supply chains, and the dramatic drop in demand, which has caused a severe reduction of liquidity available, SMEs are currently facing significant challenges not only related to the economic and financial effects of the crisis, but also the need to speed up their green and digital transition⁹. Against this background, appropriate policies and actions in this sense should follow, given the potential for SMEs to be a core engine for a ‘green’ recovery. Pursuing sustainability can boost SMEs resilience in the post-pandemic economic context, which could be done both at the EU and national level, with the adoption of green-based recovery plans supporting the take-up of technologies oriented towards reducing emissions and replacing carbon intensive operations with sustainable ones. Furthermore, with appropriate policy actions in this sense, banks could participate side-to-side with governments and EU institutions in the described green recovery process, as a non-secondary source of financing for SMEs. In fact, boosting the introduction of EE-ESG finance to SMEs on appropriate terms will foster job creation, digital innovation, green-based technologies and awareness of ESG factors in SMEs operating in crucial sectors of our economy, all of which will be vital to overcome the current crisis.

Challenges of Diversity of European SME Landscape & Access to (EE) Finance

While SMEs constitute an important customer segment for the banking industry, amounting to approximately EUR 2.4 trillion (as of June 2021)¹⁰, banks typically face challenges in relation to their financing. These are variously reported as relating, for example, to: (1) the dynamic nature of SMEs i.e. the fact that they are very heterogeneous, active in a variety of different sectors and therefore difficult to categorise, (2) the rapidly-evolving needs of SMEs i.e. traditional bank financing is not necessarily compatible with newer, innovative, fast-growing companies and (3) constraints linked to credit risk assessment as a result of poor or a lack of documentation and no or very limited public information on their performance, depending on the country.

The consequence of this is that, historically, access to finance for SMEs has often been cited by these firms as a key challenge that they face in the pursuit of their business activities. This is borne out by the ECB’s 2020 survey on access to finance for enterprises (SAFE)¹¹, which also notes that the extent to which this challenge is a concern varies in terms of SME category, size and country. Since the Global Financial Crisis in 2007-2008 and the resulting sovereign debt crisis, a number of measures have been taken to support and stimulate lending to SMEs, for example the SME supporting factor under the Capital Requirements Regulation (CRR) and monetary policy measures to restore the monetary transmission mechanism. In its SAFE results, the ECB notes that until the COVID-19 pandemic, a general improvement in SMEs’ access to finance had been observed, although funding gaps remained in particular for market-based financing instruments. Unsurprisingly, the COVID-19 pandemic is resulting in new and severe challenges for SMEs in their access to finance.

These challenges in relation to SME financing are inevitably also relevant and potentially amplified in the case of financing for SME energy efficiency projects, where the lack of standardised and transparent disclosure of SMEs EE investments and ESG performance represents an additional obstacle for banks

⁷<https://www.mckinsey.com/~/media/McKinsey/Industries/Public%20Sector/Our%20Insights/Setting%20up%20small%20and%20medium%20size%20enterprises%20for%20restart%20and%20recovery/Setting-up-small-and-medium-size-enterprises-for-restart-and-recovery-vF.pdf>

⁸ <https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/>

⁹<https://biac.org/wp-content/uploads/2021/06/Business-at-OECD-policy-paper-for-SME-recovery-and-longer-term-resilience-1.pdf>

¹⁰https://www.eba.europa.eu/sites/default/documents/files/document_library/Risk%20Analysis%20and%20Data/EU%20Wide%20Transparency%20Exercise/2021/1025102/Risk_Assessment_Report_December_2021.pdf

¹¹https://www.ecb.europa.eu/pub/economic-bulletin/articles/2020/html/ecb.ebart202004_02~80dcc6a564.en.html

in the provision of this type of financing, limiting the significant potential SMEs have in supporting the climate transition. Indeed, it is generally not possible to access energy efficiency, financial and ESG relevant information for non-listed SMEs (i.e. the majority of the market) via traditional financial data platforms. Yet, in several economic sectors (e.g. utilities and energy intensive manufacturing) transparent and reliable information on firms' energy efficiency factors is key to evaluating appropriately their credit risk. Indeed, long-term engagement of firms in energy efficiency investments can increase their profitability and reduce their credit risk.

Role of TranspArEEs Infrastructure

TranspArEEs seeks to address these barriers by mainstreaming a quali-quantitative framework for standardised collection and analysis of firms' EE and ESG information, the development of a standardised EE-ESG rating and a database at firm-level that covers a large number of entities (i.e. all large cap firms and top quartile of SME firms in Italy) with standardised information relevant to assess EE project finance risk, ESG risk and greenwashing risk. A unique added value of this infrastructure, as suggested above, is to cover non-listed SMEs, meeting an important market need. Although the testing will be conducted in Italy in a first instance, it is anticipated that this infrastructure can be replicated across other European jurisdictions.

During the course of the present Report, we will examine the benefits for banks afforded by the greater transparency and standardisation which the TranspArEEs infrastructure is expected to deliver. In turn, these outcomes will support banks, both now and in the future, in aligning to and complying with the current focus of the regulatory and supervisory landscape on Sustainable Finance, which is resulting in material impacts on banks' activities, as detailed in analysis conducted in the context of the EU-funded Nordic Energy Efficient Mortgages Hub (NEEM) Project¹².

Against this background, we will consider the regulatory and supervisory requirements banks have to meet, as well as the challenges and potential opportunities they encounter, on both the asset and liability sides of their businesses and explore the ways in which the TranspArEEs infrastructure can support banks in responding to these. We also consider the challenges and opportunities associated with the ECB's monetary policy operations and the role of TranspArEEs in this context as well both now and in the future.

The overall objective of this Report is to demonstrate the use and value of the TranspArEEs infrastructure for banks, with a view to securing its uptake and operationalisation, as well as showcasing its potential to regulators and supervisors in supporting their policy and monetary policy agendas and strategies.

¹² <https://neemhub.eu/>

1. Asset Side Considerations

A core element of the lending business, whether it be to retail consumers or businesses, is the supervision of those activities by national or European (in the case of the 111 banks directly supervised by the ECB¹³) supervisors and the requirements that banks have to comply with and the expectations they have to meet as a result. Previous studies in the area of energy efficient mortgages¹⁴ have indicated that the regulatory and supervisory landscape related to Sustainable Finance will affect all aspects of the banking business, but arguably none so much as a banks' supervisory-related commitments, including those related to their lending activities.

By way of background, banking supervision in the EU is largely driven by implementation, through the Capital Requirements Regulation (CRR)¹⁵, of the Basel Accords, a set of regulatory standards established globally by way of an agreement between central banks and financial regulators (see box 1 for more details).

What are the Basel Accords?

The Basel Accords can be broken down into Basel I, II and III:

Basel I :

- A set of global minimum capital requirements for banks agreed in 1998.
- Recommended the introduction of a minimum ratio of capital to risk-weighted assets of 8% to be implemented by the end of 1992.

Basel II :

- Replaced the 1998 Accord in 2004
- Introduced a more risk sensitive approach to calculating regulatory capital and allowed for the use of internal models.
- Introduced the three-pillar framework (described in more detail below) to ensure that banks hold sufficient capital to meet their current and expected liabilities i.e. (1) minimum capital requirements (2) supervisory review and (3) market discipline

Basel III :

- Intended to strengthen the regulation, supervision and risk management of the banking sector by:
 - Improving the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source;
 - Improving risk management and governance;
 - Strengthening banks' transparency and disclosures.
- Was endorsed by the G20 in November 2010 and consists of several sequential updates:
 - Basel III: A global regulatory framework for more resilient banks and banking systems (revised version June 2011) – focus on level and quality of bank capital.
 - Liquidity Coverage Ratio (January 2013)
 - Net Stable Funding Ratio (October 2014)

¹³ <https://www.bankingsupervision.europa.eu/banking/list/html/index.en.html>

¹⁴ <https://energyefficientmortgages.eu/knowledge-hub/>

¹⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R0575-20220410&from=EN>

- Basel III: Finalising post-crisis reforms (December 2017) – focus on calculation of banks’ Risk Weighted Assets & introduction of an Output Floor, with the aim of reducing variability in banks’ RWA calculations .
- Minimum capital requirements for market risk (January 2016, revised January 2019)

Box 1: What are the Basel Accords?

At the heart of the Basel Accords is a system of three pillars introduced under Basel II (see box 1) to ensure that banks hold sufficient capital to meet their current and expected liabilities: (1) minimum capital requirements, (2) supervisory review process and (3) market discipline:

1.1 Pillar 1 (minimum capital requirements)

Pillar 1 of the supervisory framework is focussed on ensuring that minimum regulatory capital calculated for credit risk, operational risk and market risk is appropriately aligned to the bank’s actual risk of economic loss. For most banks, the most significant source of credit risk are loans. Regulatory capital for credit risk is calculated on the basis of risk weights (RW) which are assigned to banks’ assets as a measure of their riskiness and are therefore used to derive risk-weighted assets (RWA).

One of the underlying premises of the Energy Efficient Mortgages Initiative is the potential for a realignment of capital requirements for this type of exposure based on evidence of a significant negative correlation between the energy performance of the underlying real estate collateral and credit risk, based on lower probability of borrower default (PD) linked to greater disposable income and lower loss-given-default (LGD)¹⁶ linked to enhanced property value.

As far as lending to SMEs is concerned, in the EU, the CRR already introduced a capital discount for SME bank lending in 2014 to counterbalance the increased regulatory burden on banks following the financial crisis and to take account of the dependence of SMEs on bank lending. Specifically, the CRR introduced a 0.7619 SME supporting factor which is linked to the following eligibility criteria, as indicated by the EBA¹⁷:

- The loan is allocated to corporate exposures, retail exposures or exposures secured by immovable property. Exposures in default are excluded;
- An SME is defined according to the 2003 Commission Recommendation¹⁸ (including the criterion that turnover must be below EUR 50 million) (although not the balance sheet and number of employee criteria in Article 2 of the Recommendation).
- The total amount owed to the lending institution, its parent and subsidiary undertakings (including exposure in default, but excluding the claims secured on residential property) shall not exceed EUR 1.5 million. This threshold is different from the already existing quantitative threshold of EUR 1 million owed for the allocation of exposures to retail/corporate exposure classes.

The question here therefore is the extent to which the TranspArEEEnS infrastructure could support further or separate capital discounts for ‘green’ or ‘energy efficient’ SME exposures. As indicated above, the potential for a realignment of capital requirements for energy efficient mortgages is based on the energy performance of the underlying real estate collateral, whereas a potential further realignment of capital

¹⁶<https://energyefficientmortgages.eu/wp-content/uploads/2021/07/BE-IT-NL-UK-Correlation-Analysis.pdf>, <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Italian-Correlation-Analysis.pdf> & <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Extended-Dutch-Correlation-Analysis.pdf>

¹⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R0575-20220410&from=EN>

¹⁸Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises.

requirements for SME exposures would, in the majority of cases, be based on an assessment of the bank of the SME's cash flow or the quality of its balance sheet (except where the SME exposure is secured against real estate collateral). The TranspArEEs infrastructure could therefore supply banks with important and relevant information on SMEs' EE-ESG credentials. Whether this enhanced transparency could deliver evidence of lower risk and therefore translate into a further or separate discount for EE SME exposures is difficult to surmise at this stage. This is largely due to the fact that credit assessments for SME lending are typically related to intangible and business risk which are more difficult to quantify, than for example the tangible risks related to real estate in the case of energy efficient mortgages. However, this does not detract from the fact that this enhanced transparency would deliver clear and obvious value for banks with regard to the EE credentials of the SMEs they are investing in from a credit assessment and therefore risk management perspective. It would also support audit of banks' loan books to understand the risk profile of their existing SME exposures to understand the extent of their sustainability.

Despite this assessment, it should be highlighted that the mandate given to the EBA under Article 501(c) CRR¹⁹ to assess whether a dedicated prudential treatment of exposures related to assets or activities associated substantially with environmental (and/or social) objectives would be justified as a component of Pillar 1 capital requirements would, in principle, also apply to SME exposures, pointing to the importance of careful monitoring of this mandate in light of the TranspArEEs infrastructure. Significantly, in its Renewed Sustainable Finance Strategy²⁰, the European Commission proposes that the EBA brings forward its work in this area by two years, to 2023, pointing to the perceived importance of this exercise by the European Commission and the potential for accelerated follow up to this mandate. This certainly points to the value for banks in starting a robust data collection exercise with regard to the EE credentials of their existing and future SME exposures, if only for the greater transparency this will deliver from a risk management perspective.

An important consideration in the context of reflections regarding capital requirements for SME exposures is a contrasting situation, in which weak sustainability credentials of SMEs, while most probably not leading to higher risk weights through pillar 1, could be taken into consideration in the supervisory dialogue under pillar 2. As such, in the next section we consider pillar 2 requirements, the challenges and opportunities for banks and the relevance of the TranspArEEs infrastructure in this area.

1.2 Pillar 2 (Supervisory Review)

Pillar 2 of the supervisory framework was introduced by Basel II in 2004 and has at its core a process of review by supervisors aimed at fostering the development and use of better risk management techniques by banks. This process is referred to as the Supervisory Review and Evaluation Process (SREP)²¹ and consists of a set of practices put forward on an annual basis by the supervisory authorities to guarantee that each credit institution has adopted appropriate internal strategies, processes, capital and liquidity to the risks to which it is or might be exposed. In fact, Pillar 2 aims to further reinforce the first pillar, minimum capital requirements, and as a result produces an additional bank-specific capital requirement, which should encompass those risks that are not comprehensively addressed by pillar 1, such as interest rate risk in the banking book and non-financial risks such as strategic risk, business model risk and reputational risk, or risks which may be under-estimated. Additionally, Pillar 2 includes a guidance aspect, as banks are also expected to comply with the ECB's Pillar 2 guidance²², indicating the level of capital that a bank should maintain in order to bear financial stress.

¹⁹<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R0575-20220410&from=EN>

²⁰https://eur-lex.europa.eu/resource.html?uri=cellar:9f5e7e95-df06-11eb-895a-01aa75ed71a1.0001.02/DOC_1&format=PDF

²¹ <https://www.bankingsupervision.europa.eu/banking/srep/html/index.en.html>

²² <https://www.bankingsupervision.europa.eu/banking/srep/html/p2g.en.html>

Against a background in which the prudent and safe management of ESG risks in the financial sector is gaining more and more attention, concerns have been expressed about the ability of the existing supervisory review processes to provide supervisors with the necessary insights into the impact of ESG risks on financial positions and related weaknesses or vulnerabilities, as well as banks' ability to manage climate-related and environmental risks. Consequently, the EBA and the ECB have respectively taken actions - and will continue to do so in the future - with a view to promoting and ensuring the appropriate identification, assessment and management of these risks by credit institutions and investment firms and including ESG risks in the SREP.

In this section of the Report, we will consider the challenges highlighted by the EBA and ECB in this area, their respective recommendations and requirements with regard to the appropriate management of the different risks and, at the end of this section, the ways in which the TranspArEEnS infrastructure can support banks in aligning and complying with these proposals and requirements.

EBA Report on ESG Risks Management & Supervision

The EBA's Report on the management and supervision of ESG risk²³, published in June 2021, focuses on the potential inclusion of ESG risks in Pillar 2 by providing credit institutions and investment firms with common definitions of ESG risks, proposing how they should identify, evaluate and manage ESG risks throughout the implementation of arrangements, practices, mechanisms and strategies, and by providing guidance to supervisory authorities on taking into account ESG risks in the SREP.

The Report describes how ESG factors - with a particular focus on those which are climate change related - can impact institutions' counterparties or invested assets, as well as how they can affect financial risks and therefore also credit risk. The EBA examines the transmission channels through which ESG risks bear upon the traditional financial risks categories, as follow (page 34):

²³https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf

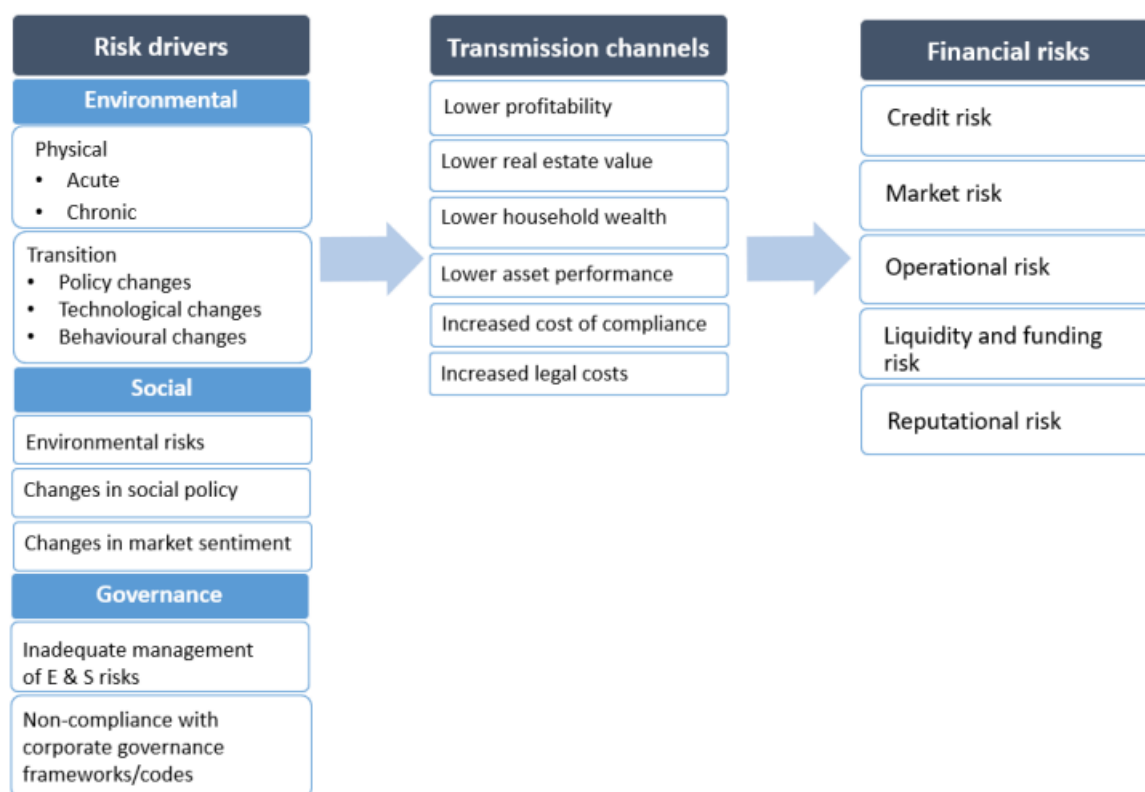


Figure 1: EBA Summary of ESG Risk Drivers, their Transmission Channels & How these can impact financial risk categories

The Report also identifies remaining gaps and challenges in relation to assessing ESG risks²⁴. With regard to the challenges specifically, the EBA points to:

1. Uncertainty regarding the policy framework and the timing and effects of physical risks
2. Insufficient data to understand the potential impacts of ESG risks on the performance of financial assets
3. Methodological constraints related to risk management models being typically based on historical data making it difficult to calculate PD and LGD
4. Time-horizon mismatch between ‘traditional’ management tools and the timeframe for the materialisation of ESG risk
5. Multi-point impact of ESG risks on institutions including potential impacts on credit losses, business models, capital adequacy, credit ratings, collateral valuations leading to higher LGD and capital and funding costs.
6. Non-linearity of ESG risks in terms of impacts.

In order to address the above-listed challenges, the EBA suggests adopting for the purpose of the ESG risk assessment an approach based on three elements, namely identification, evaluation and action²⁵. More in detail:

²⁴https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf

²⁵https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf

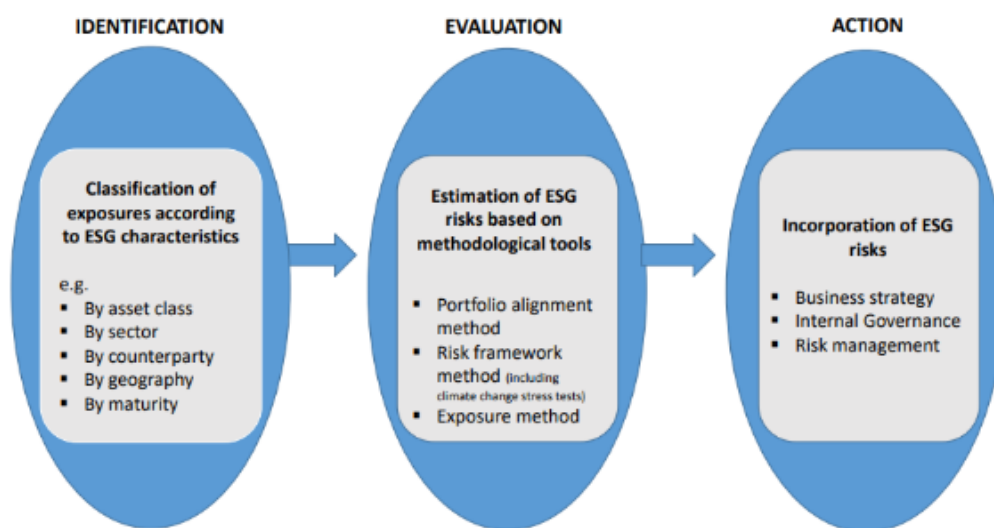


Figure 2: EBA Report on management and supervision of ESG risks for credit institutions and investment firms

- **Identification:** This involves the classification of assets according to their ESG features in order to identify ESG risks on the basis of specific qualitative and quantitative indicators. For example, the EBA suggests that a geographic classification would help to identify the proportion of assets that are particularly vulnerable to the impact of physical risks, such as climate-related threats in specific regions, while a sector classification could be used to increase the understanding of the share of exposures vulnerable to transition risks, such as regulatory changes and technological developments potentially leading to alterations in those specific sectors. This step in the classification process makes it possible to clearly identify the main potential drivers of ESG risks, which then justifies a more detailed analysis of the most relevant categories of exposures, if necessary.
- **Evaluation:** This second step is intended to follow the classification of exposures arising from the identification process. In order to implement this process, the EBA suggests the application and possible combination of methodological tools to measure or assess the potential impact of ESG risks on the institution's exposures. However, since such methodologies and their respective underlying data are still evolving, a more flexible approach is proposed for the time being. Nevertheless, evaluating classified exposures by using methodological tools would provide a clearer understanding of the institution's financial vulnerability to ESG risks. Against this background, the EBA Report considers a range of already-existing indicators, metrics and evaluation methods necessary to ESG risk management purposes, with emphasis on: (i) the portfolio alignment method, which quantifies the level of alignment of an institution's portfolio with global sustainability targets, (ii) the risk framework method (including scenario analysis), which measures the impact of sustainability-related issues on the risk profile of an institution's portfolio and its standard risk indicators and (iii) the exposure method, which assesses the ESG factors performance of individual exposures and counterparties perform. The use of one or all these methods is not made compulsory by the EBA, nonetheless the EBA considers the application of a combination to be beneficial.
- **Action:** The final element of the process consists of implementing actual actions to incorporate ESG risks into risk management, such as by adopting a business strategy and risk management approach that support the monitoring and control of ESG risks, as well as changes to the organisational set-up of the institution when appropriate. Of particular relevance for the present Report are recommendations regarding:

- engagement with borrowers, investee companies and other stakeholders, and the assessment of the potential need to develop sustainable products or to adjust features of existing products, as a way to contribute to and ensure alignment with strategic objectives and/or limits,
- the incorporation of ESG risks into risk management frameworks through the:
 - Embedding of material ESG risks in the risk appetite framework;
 - Management of ESG risks as drivers of financial risks, in a manner consistent with the risk appetite, and as reflected in both the ICAAP and ILAAP frameworks;
 - The identification of the gaps financial institutions are facing in terms of data and methodologies and take remedial action;
 - The setting out of appropriate policies taking ESG risks into account for the assessment of the financial robustness of counterparties;
 - The development of risk monitoring metrics at exposure, counterparty and portfolio level.

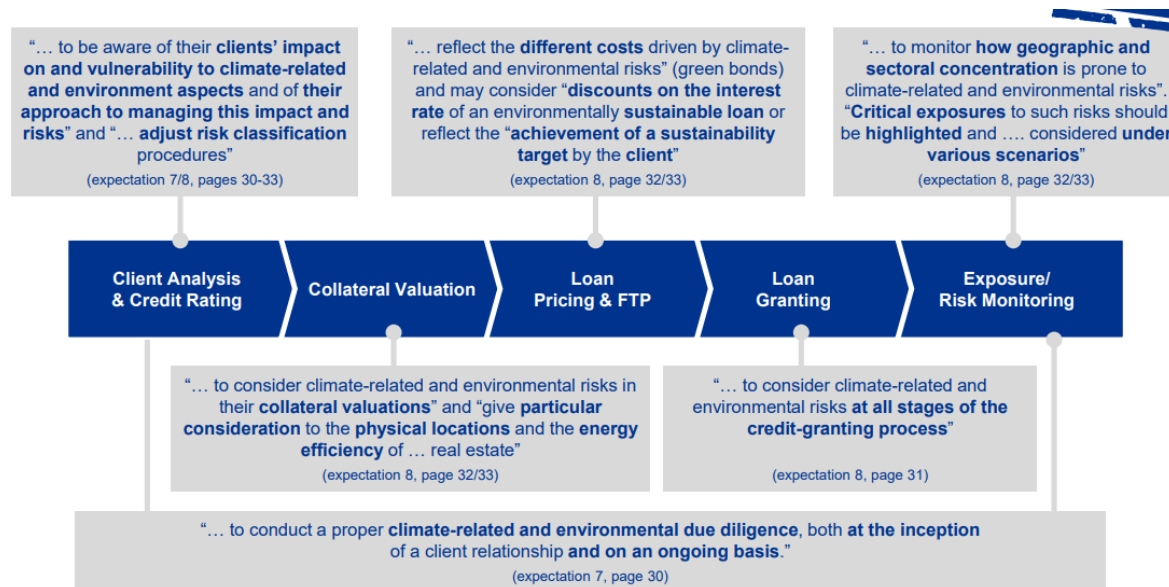
ECB Guide on Climate -related & Environmental Risks

In recent years, the ECB has also turned its attention increasingly to climate and environmental risks and their management by financial institutions. In November 2020, the ECB published its Guide on climate-related and environmental risks²⁶ which sets what it understands as the safe and prudent management of climate-related and environmental risks under the current prudential framework. It furthermore sets out the ECB's expectations vis-à-vis financial institutions in respect of climate-related and environmental risks – as drivers of established categories of prudential risks – in the context of their business strategy and governance and risk management frameworks. It further explains how the ECB expects institutions to enhance their climate-related and environmental disclosures and thus enhance their overall transparency.

The ECB's supervisory expectations 7 and 8 (pages 30-33) are particularly relevant for SME lending given the focus on the integration of climate-related and environmental risks into credit risk management and processes, aligned with the EBA Guidelines on Loan Origination & Monitoring (LOaM). In an overview document on the Guide²⁷, KPMG breaks down the relevant aspects of credit risk management and processes and links the two expectations to each of these:

²⁶<https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf>

²⁷ <https://assets.kpmg/content/dam/kpmg/de/pdf/Themen/2020/06/climate-related-and-environmental-risk.pdf>



Source: KPMG (2020), Overview of the ECB's recently published Draft guide on climate-related and environmental risks, ([link](#))

Figure 3: KPMG analysis of integration climate & environmental risks into credit risk management and processes

As far as the ECB's follow-up is concerned, in early 2021 it invited banks to carry out a self-assessment in light of the supervisory expectations outlined in the Guide and to prepare action plans on that basis. According to a subsequent analysis by the ECB of the result of this self-assessment²⁸, the vast majority of banks have developed implementation plans, and many are taking the steps to improve their practices. However, the ECB's analysis also indicated that no bank is close to meeting all 13 supervisory expectations. In response to these findings, the ECB sent individual feedback letters to banks in November 2021, highlighting the need for them to address shortcomings and calling on them to take action. In 2022, it is conducting a full supervisory review of banks' practices, including a supervisory climate risk stress test to assess how prepared banks are to address and manage climate risk.

1.3 Pillar 3 (Market Discipline)

Pillar 3 of the supervisory framework fosters market discipline through a comprehensive set of public disclosure requirements which allow market participants to assess, for example, a bank's material risks, capital ratio, liquidity ratios and remuneration practices.

At EU level, the Sustainable Finance agenda has given significant attention to ESG related disclosure through the adoption of the EU Taxonomy, the Sustainable Finance Disclosure Regulation (SFDR) and the Non-Financial Reporting Directive (NFRD), which is set to be replaced by the Corporate Sustainability Reporting Directive (CSRD). Furthermore and in line with the requirements stipulated by Article 449a of the CRR²⁹, according to which large institutions which have issued securities that are admitted to trading on a regulated market of any Member State shall disclose information on ESG risks on a regular basis starting from June 2022, the EBA has provided a series of climate and ESG risk

²⁸ <https://www.bankingsupervision.europa.eu/press/pr/date/2021/html/ssm.pr211122~6984de0ae5.en.html>

²⁹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013R0575-20220410&from=EN>

disclosure requirements in its final draft implementing technical standards (ITS) on Pillar 3 disclosures on ESG risks³⁰, which the EBA sums up as follows:

	WHAT TO DISCLOSE?	EXAMPLES OF DISCLOSURES
RISK DISCLOSURES	CLIMATE CHANGE TRANSITION RISK Information on exposures to sectors or assets that may highly contribute to climate change	<ul style="list-style-type: none"> ▶ Exposures to fossil fuel companies excluded from sustainable climate benchmarks, and to other carbon-related sectors ▶ For real estate exposures, distribution of the exposures by energy performance of the collateral
	CLIMATE CHANGE PHYSICAL RISK Risk exposures subject to extreme weather events (sector/geography)	<ul style="list-style-type: none"> ▶ Assets subject to impact from chronic climate change events by sector and geography ▶ Assets subject to impact from acute climate change events by sector and geography
MITIGATING ACTIONS	Actions that support counterparties in the transition to a carbon neutral economy but that do not meet taxonomy criteria	▶ Building renovation loans that improve the energy efficiency of the building but do not meet the taxonomy screening criteria
	Actions that support counterparties in the adaptation to climate change but that do not meet taxonomy criteria	▶ Loans to build barriers against flooding, or water management mechanisms against draughts but to not meet the taxonomy screening criteria
GREEN ASSET RATIO	Information on exposures towards NFRD Corporates and Retail financing taxonomy-aligned activities consistent with Paris Agreement goals that contribute substantially to climate change mitigation (CCM) and adaptation (CCA), including information on transitional and enabling activities.	<ul style="list-style-type: none"> ▶ Contributing to CCM: Generation of renewable energy ▶ Enabling CCM: Manufacture of renewable energy technologies ▶ Contributing to CCA: Afforestation ▶ Enabling CCA: Engineering activities for adaptation to climate change
BANKING BOOK TAXONOMY ALIGNMENT RATIO	Information on exposures towards non-NFRD corporates not assessed in the GAR financing taxonomy-aligned activities consistent with Paris Agreement goals, contributing substantially to CCM and CCA. Simplified assessment, based on bilateral information and estimates.	
QUALITATIVE DISCLOSURES	Qualitative information on environmental, social and governance risks	<ul style="list-style-type: none"> ▶ Governance arrangements ▶ Business model and strategy ▶ Risk management

Figure 4: EBA Summary of ESG disclosures – Pillar 3³¹

The Green Asset Ratio (GAR), according to which banks must disclose their assets financing economic activities that are taxonomy-aligned as a share of their total assets, and the separate Banking Book Taxonomy Alignment Ratio (BTAR) are worth particular consideration in the present Report. This is because exposures to companies which are not subject to NFRD reporting obligations (SMEs and other non-NFRD corporates) are excluded from the calculation of the GAR, with significant knock-on implications for banks' disclosure.

³⁰https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Draft%20Technical%20Standards/2022/1026171/EBA%20draft%20ITS%20on%20Pillar%203%20disclosures%20on%20ESG%20risks.pdf

³¹https://www.eba.europa.eu/sites/default/documents/files/document_library/News%20and%20Press/Communication%20materials/Infographics/ESG%20disclosure/1026178/EBA%20summary%20of%20ESG%20disclosures%20-%20Pillar%203.jpg

As way of background to the GAR, on September 2020 the European Commission issued a [call for advice to the ESAs](#) with a request for them to determine the KPIs and associated methodology that corporates subject to the NFRD should use to disclose information on their taxonomy-aligned activities, in line with Article 8 of the Taxonomy Regulation. In its opinion³² published on 1 March 2021, the EBA provided its proposal at the heart of which was the Green Asset Ratio, including exposures towards SMEs.

In its Delegated Regulation (EU) 2021/2178 of 6 July 2021³³ however, the European Commission presented the final definition of the GAR, with a number of differences with respect to the EBA's original proposal, such as a delay in the application of the GAR to year-end 2023, but most significantly the exclusion of exposures to undertakings that are not obliged to publish non-financial information (i.e. SMEs). The rationale for this decision was to give SMEs time to adapt and decide whether or not to report, and financial institutions the time to gather this information from SMEs³⁴.

This means that a significant proportion of European banks' exposures, including those to SMEs, while they might be EU Taxonomy aligned, will not be eligible for the GAR calculation. The Corporate Sustainability Reporting Directive (CSRD), soon to be adopted further to a political agreement between the European Parliament and Member States in the Council on 22 June 2022, will extend the scope of the NFRD, but only to large companies and companies listed on regulated markets, with the exception of listed micro-enterprises.

As a result of this situation and notwithstanding the extension of the scope of the NFRD, in its final ITS, the EBA introduced the "banking book taxonomy alignment ratio" (BTAR), effective from June 2024, which will cover those exposures which are excluded from the GAR. The BTAR essentially represents an additional indicator to measure the alignment of a banks' total exposures to the EU Taxonomy, as well as to allow investors to distinguish more easily between those credit institutions which are more sustainability-oriented and the ones that are not.

The significance of these outcomes relates to the fact that, while the BTAR will undoubtedly add value for the reasons outlined above, the GAR is widely anticipated by the market to be the more significant of the two for the vast majority of banks in the EU. Indeed, as ING suggests in recent analysis, *"when it comes to the taxonomy-related disclosures under the sustainable finance disclosure regulation (SFDR) (applicable per 1 January 2023), the GAR information provided by banks will likely still be the leading metric for portfolio managers. After all, the final draft SFDR regulatory technical standards (RTS), published by the European Supervisory Authorities (ESAs) in October last year, suggest that for financial undertakings the share of taxonomy aligned activities disclosed under Article 8 of the taxonomy regulation (ie, the GAR) should be considered. If that remains the case, the GAR will likely be of more significance as a taxonomy-related performance driver to bank bonds than the BTAR"*³⁵.

Having said this, in its FAQ on Article 8 of the EU Taxonomy³⁶, the European Commission suggests that companies not subject to the NFRD, including SMEs, may disclose their taxonomy-alignment KPIs voluntarily, for example, for the purpose of securing environmentally sustainable finance based on alignment with the Taxonomy Regulation, or as part of their overall business strategy based on environmental sustainability. The European Commission furthermore indicates in its FAQ that *"the application of KPIs of financial companies in relation to those undertakings will be reviewed over time,*

³²<https://www.eba.europa.eu/eba-advises-commission-kpis-transparency-institutions%E2%80%99-environmentally-sustainable-activities>

³³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R2178&from=EN>

³⁴ https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-article-8-faq_en.pdf

³⁵ <https://think.ing.com/articles/bank-pulse-btar-to-supplement-gar-as-taxonomy-alignment-measure#a6>

³⁶ https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-article-8-faq_en.pdf

as part of the general review of this disclosures delegated act". And indeed, in Article 9 of the Delegated Regulation on Article 8 of the Taxonomy Regulation³⁷, the European Commission commits to reviewing the decision to exclude SME exposures from the GAR calculation by 30 June 2024. This review will however be accompanied by an assessment of the administrative burden, the impact on access to finance and the potential impacts on SMEs to ensure there are no disproportionate consequences for these firms.

This clearly points to the importance and related opportunities for banks of: (1) SMEs reporting (as soon as possible) on their ESG credentials and in particular their Taxonomy eligible activities and therefore alignment, and (2) for banks to start systematically collecting this information for their new lending to SMEs via their loan origination processes and for their existing portfolios of SME loans.

³⁷ https://ec.europa.eu/finance/docs/level-2-measures/taxonomy-regulation-delegated-act-2021-4987_en.pdf

2. Liabilities Side Considerations

As indicated in the introduction to this Report, for a variety of reasons, SME financing can present a number of challenges, whether for firms wishing to access financing or for banks in their ability to provide it. Banks' ability to lend to SMEs is inherently linked to their own ability to raise finance on capital markets.

2.1 Covered Bonds

With the implementation of the recently adopted Covered Bond Directive³⁸, the EU has provided a strong legal framework for the covered bond market. While the Directive does not include SME loans as eligible collateral under Article 6, covered bonds in Europe indirectly provide liquidity to SMEs through mortgage collateral, representing macro-prudential funding support to the SME sector and more in general to the economic growth of the middle class. Interestingly, the Covered Bond Directive presents an 'opening' directly related to SME financing through the creation of a long-term dual recourse funding instrument, modelled on the covered bond product, known as European Secured Notes (ESN), which will be discussed in more detail below. Indeed, the value of a dual recourse instrument based on the covered bond instrument and deployed for the financing of non-traditional asset classes has already been recognised in Europe as a way of providing a supply of sustainable private finance to the real economy through a funding instrument which remains accessible in stress scenarios and acts as an anti-cyclical measure. A key example of this was the well-received 2013 five-year €500 million Commerzbank SME Covered Bond which was essentially structured under contract law. Beyond the borders of the EU, SME loan backed covered bonds are permitted under the Covered Bond Law in Turkey.

2.2 European Secured Notes (ESN)

While the Covered Bond Directive limits the possibility of directly funding SMEs through the issuance of covered bonds, as indicated above covered bonds can nevertheless serve as a best practice example for the development of separate funding instruments, such as ESN. Indeed, the key characteristics of covered bonds, including the preferential claim of investors in the event of default to both the cover pool of financial assets and the balance sheet of the issuer, asset coverage, bankruptcy-remoteness and regulation, translate into reduced funding costs for banks and offer favourable conditions for investors. A separate Report in this series will consider covered bond EE-ESG disclosure in more detail as best practice for disclosure of this kind in relation to other funding instruments, including ESN. In turn, this best practice will be explored in detail in the context of ESN, in another separate Report under this Project.

As a result of the security features of covered bonds and their benefits for market participants, since 2015 and in the context of the Capital Markets Union (CMU) debate, there have been efforts at EU level, also supported by the EMF-ECBC³⁹, to promote the development of ESN as a complement to covered bond and allowing for the financing of asset classes beyond the traditional covered bond collateral types, such as SME loans. As suggested above, this instrument is intended to combine existing covered bond techniques and markets' best practices for the establishment of a funding solution for lenders and a new product for institutional investors, which would also be accessible in a stress scenario, thereby acting as an anticyclical funding tool and providing support for the real economy. As we move towards a post-pandemic context, there is an additional urgent need for a comprehensive, coordinated European response to the ensuing economic impact, especially for SMEs.

³⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L2162&from=EN>

³⁹ <https://hypo.org/ecbc/market-initiative/european-secured-note/>

In 2017, the European Commission issued a call for advice⁴⁰ to the European Banking Authority (EBA) on (i) whether a dual recourse instrument, similar to covered bonds, may provide a useful funding option to banks engaged in lending to SMEs and infrastructure projects and (ii) an appropriate EU framework and regulatory treatment for this instrument. In its subsequent Report on ESNs (published in July 2018) the EBA concluded that in periods of stress, *“ESNs might provide a useful additional source of funding for SMEs, especially for small institutions that do not have access to the securitisation market and/or have difficulty issuing unsecured long-term debt”*. (p.2).

The EBA models its proposed approach to designing ESNs on the European Covered Bond Framework and certain characteristics of the covered bond product, most notably its dual recourse nature. However, as a result of specific features of SME loans compared to mortgage and public sector loans, namely the typically higher rates of default, the frequently unsecured nature of SME loans and, most relevant in the current context, the lack of standardised information on the credit performance of SME loans, the EBA makes specific product standard recommendations to mitigate associated risks. With regard to the latter point, the EBA recommends that data should be disclosed on a loan-by-loan basis to facilitate investor due diligence. In particular disclosed data should include, information on (i) the number of loans in the cover pool, (ii) the exposure value of and (iii) the original tenor of each loans, (iv) the field of the industry in which the borrowers operate and (v) the location of the assets.

3. ECB Monetary Policy Strategy

In line with the increasing attention of the EU authorities and Member States on Sustainable Finance, the European Central Bank (ECB) has turned its attention to incorporating climate-change and environmental-related considerations in its monetary policy strategy, as announced in an action plan and roadmap published on 8 July 2021. This comes against a background where the ECB recognises that *“climate change and the transition towards a more sustainable economy affect the outlook for price stability through their impact on macroeconomic indicators such as inflation, output, employment, interest rates, investment and productivity; financial stability; and the transmission of monetary policy”*⁴¹.

Among the ECB’s climate-change related activities are plans to integrate climate change considerations into monetary policy operations. Of particular interest in the present context are plans in the areas of disclosure and risk assessment, in relation to the collateral framework and for corporate sector asset purchases:

Regarding disclosure and risk assessment, the ECB intends to introduce climate-related disclosure requirements for credit institutions using private sector assets as collateral in ECB monetary policy operations and for private sector asset purchases. These requirements will apparently consider EU policies and initiatives in the sector of “green” disclosure and reporting, therefore the EU Taxonomy, Corporate Sustainability Reporting Directive (CSRD) and Sustainable Finance Reporting Directive (SFRD). The ECB will announce a detailed plan in 2022 and the requirements are likely to take effect in 2024. In an analysis from July 2021 entitled “ECB – Smoking out Fossil Fuels”⁴² (p.5), ING points out (p. 5) that the ECB’s planned actions *“may encompass the first steps towards a more favourable haircut treatment and a stronger asset purchase focus for assets that, based on the sustainability key performance indicators (KPIs), are considered to have lower climate risks”*.

⁴⁰<https://www.eba.europa.eu/sites/default/documents/files/documents/10180/1983643/b65d19ed-6b2b-427e-b183-47352c59ede7/Call%20for%20advice%20to%20the%20EBA%20on%20European%20Secured%20Notes.pdf?entry=1>

⁴¹ https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html

⁴² <https://think.ing.com/articles/ecb-smoking-out-fossil-fuels/#a10>

For the time being, the greening of the asset purchase programs is primarily focused on corporate bonds. Specifically, the ECB will include climate-related criteria when guiding its corporate asset purchases and this could include looking at how issuers are complying with the Paris Agreement or how they are committed to similar goals. Additionally, as of 2023 the ECB will start disclosing climate-related information on its corporate asset purchases. This could be of significance for SMEs in the event that they themselves are able to issue corporate bonds, as envisaged under the CMU Action Plan.

As far as the collateral framework is concerned, the ECB will take into account climate risks when assessing the assets that banks want to pledge as collateral for loans from the ECB. As a consequence, assets whose climate risks are higher will be subject to different treatment from those with lower climate risk. As indicated above however, for the time being the ECB is focussing on greening its corporate bond purchases, and as ING (2021) notes in order to make a difference in the collateral framework, the ECB would have to *“expand its horizon beyond corporate exposures alone and at least consider covered and preferred senior bank bond exposures too”* (p.5). If the ECB were to expand its greening plans beyond corporate bonds as ING suggests, it is conceivable that this could at some point extend also to ESNs, challenging banks to have a sufficient volume of green instruments to comply with the climate-related criteria and also be able to evidence this eligibility and disclose it to the ECB.

One additional consideration here, as ING analysts point out, is that, despite the planned efforts above, the greatest impact for the greening of banks’ assets will not come from their marketable assets, such as securities, which represent a much smaller proportion of their balance sheets, but from banks’ non-marketable assets such as loans to households and corporates. For the time being, however, there are no plans in the roadmap to ‘green’ Targeted Longer-Term Refinancing Operations (TLTRO), although in September 2020 ECB President Christine Lagarde indicated that the ECB would consider this move in the context of the strategy review⁴³.

In this respect and worthy of note here are proposals made by Positive Money Europe⁴⁴ to use the TLTROs to incentivise banks to lend more money for green investments, making green lending more affordable for SMEs and households and driving the transition. Currently, the TLTRO programme provides financing to credit institutions regardless of the ‘colour’ of their lending. In other words, there is no differentiation between banks’ green (i.e. contribute to the EU’s environmental objectives), red (harm the EU’s environmental objectives) or grey (neither contribute nor harm) financing activities. With the aim of pursuing a green-oriented economic recovery and recognising the fundamental role of banks in tackling climate change, Positive Money suggests in its proposal to adopt TLTROs in which the interest rate that banks pay depends on their volume of green lending, based on alignment with the EU Taxonomy Regulation.

Inevitably, such a move would put pressure on banks’ conventional lending to SMEs, incentivising them to increase as much as possible their ‘green’ financing of these firms in order to be able to make use of these refinancing opportunities.

⁴³ https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200928_2_transcript~aae0db0fa5.en.pdf

⁴⁴ http://www.positivemoney.eu/wp-content/uploads/2021/02/2021_Building-Renovation-TLTROs.pdf

4. Role of TranspArEEs Infrastructure

As indicated in the introduction to this Report, TranspArEEs will mainstream a quali-quantitative framework for the standardised collection and analysis of firms' EE and ESG information, a database at firm-level with standardised information relevant to assess EE project finance risk, ESG risk and greenwashing risk, and the development of a standardised EE-ESG rating. Taken together these tools have the potential to greatly support banks in meeting their regulatory and supervisory commitments, developing additional funding instruments and helping to secure eligibility for monetary policy operations, all to the benefit of banks as lenders and issuers, of investors, of regulatory and supervisory authorities, and last but by no means least, SMEs themselves. In turn this will support the climate transition and the recovery from the COVID-19 pandemic.

Firstly, the TranspArEEs infrastructure will provide for a standardised framework for the gathering of quantitative and qualitative information on the EE and ESG dimensions, risk and performance of firms, including SMEs⁴⁵, in different sectors (buildings, industry, transport, for example). This information will be sourced by way of a standardised survey, elaborated by CRIF, which consists of 60+ general questions on EE and ESG addressed to all SMEs comprised in the definition of the EU recommendation 2003/361⁴⁶ (Turnover lower than €50 million), individual companies and partnerships excluded, while a set of more specific questions is addressed to SMEs operating in the Construction and Manufacturing sectors. The choice to further target two economic sector resulted from a series of considerations based on four drivers (expert judgment, National Resilience and Recovery Plans (NRRP), market analysis, and EU Taxonomy) relating to the importance of the above-mentioned sectors from an environmental impact perspective. Finally, the questionnaire as a whole is standardised in line with EU Guidelines, International Standards and Certifications. As explained in the introduction to this Report, the survey is currently being deployed in Italy, but its standardised nature means that not only can it be replicated in any EU country in which an SME operates but it can be replicated across jurisdictions.

This data will subsequently be stored in a large-scale firm-level database, alongside other relevant information, including EE performance for SMEs and listed firms in the energy and utility sector, building data, EE scores based on the energy labels of the products they produce and SME' financial performance. Beyond collecting information on the main ESG drivers of firms' performance, the database will focus on EE as a key component of the environmental dimension of ESG drivers and will enable the role of EE in ESG's E scores for SMEs in particular to be detected. Indeed, EE is one of the dimensions from which the environmental dimension of ESG ratings is usually derived. The levers used to assess SMEs' EE credentials will include renewables (use of renewable energy), green buildings (green certification and EE), policy & innovation (presence of policies & IPR), consumption (energy intensity of the activity) (see figure 5). The significance of this framework is that data on EE and ESG credentials of SMEs in particular is not available via traditional data providers.

⁴⁵ Considered to be those with a turnover of <50m EUR.

⁴⁶ Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises.

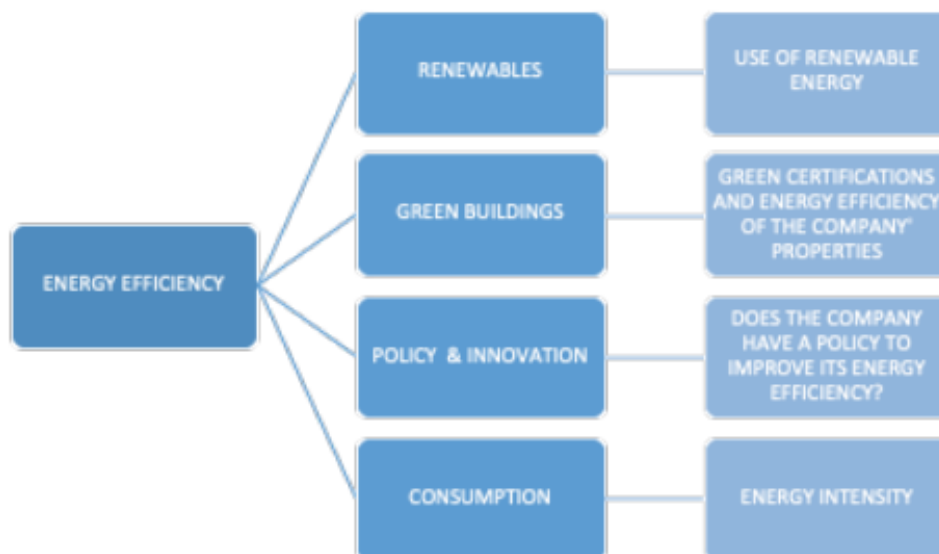


Figure 5: The 4 EE levers

Additionally, the ‘governance’ in ESG is another key element in a firm’s credit rating assessment, particularly for SMEs where internal organisation and processes may be weaker or unclear. This becomes particularly relevant when improving EE depends on having good governance processes within the firm. Taken together, risk factors linked to the environmental and social aspects of ESG are also crucial for a firm’s rating because they can undermine a firm’s financial credentials in the short term (e.g. in the event of fines for contravening environmental legislation) as well as the sustainable profile of the business in the medium to long term. These risk factors are influenced by i) risks inherent to the Industry in terms of potential adverse impacts from an environmental and social perspective, ii) the size of the firm and iii) the geographical area in which the firm operates. Every operation and activity of the firm generates specific E&S risks which could have material impacts on their economic-financial performances.

By way of Artificial intelligence and Big Data techniques, the data collected via the standardised survey and stored in the firm-level database will subsequently be used to generate EE-ESG ratings. These will deliver a robust understanding of SMEs’ EE and ESG credentials and therefore enhance banks’ understanding of the extent to which these ESG credentials influence SMEs creditworthiness and the subsequent performance of exposures to these firms over time. Specifically, the rating will measure the aggregated impact of EE and ESG factors of the firm and its relationship with the firms’ creditworthiness at a sectoral and geographical level will be subject to analysis. As per the premises of analysed regulatory and policy drivers, a strong impact over time of EE on credit risk and cost of capital and debt (i.e. lower interest rates) is expected.

More specifically with regard to the EE-ESG rating methodology, the TranspArEEs model will be based on the philosophy of the MORE (Multi Objective Rating Evaluation) model, a creditworthiness model developed by Modefinance⁴⁷ to assess the level of distress of industrial companies using data included in their financial statements by means of a risk class (see figure 6). What drives the model is assessing the creditworthiness of a company by evaluating its overall equilibrium in terms of financial stability. The MORE model rewards companies that fare good overall and penalizes these which excel under a standpoint (e.g. profitability) but performs poorly under a different one (e.g. solvency). The result is an evaluation of the balance sheet and income statement of the company, from which the model calculates the probability of default and the creditworthiness of the company. The model also enables

⁴⁷ <https://www.modefinance.com/en>

the performing of stress tests on key variables: sales, short and long-term liabilities, Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA), Days Payable Outstanding (DPO), Days Sales Outstanding (DSO) and Days Inventory Outstanding (DIO). The MORE model is already widely used in rating of investments (including EE ones) for financing to SMEs, with the addition of a qualitative score component, taking account of a firm’s size, industry, location, creditworthiness and economic and financial history.

MORE Scoring Class	Macro class	Assessment
AAA	Healthy Companies	The company's capacity to meet its financial commitments is extremely strong.
AA		The company has very strong creditworthiness.
A		The company has a high solvency.
BBB	Balanced companies	Capital structure and economic equilibrium are considered adequate.
BB		The company's performances are adequate considering the sector and the country in which it is operating.
B	Vulnerable companies	The company presents vulnerable financial signals.
CCC		The company has a dangerous disequilibrium on the capital structure and on its economic and financial fundamentals.
CC	Risky companies	The company shows signals of high vulnerability.
C		The company shows considerable pathological situations.
D		The company no longer has the capacity to meet its financial commitments.

Figure 6: MORE Risk Classes

4.1 TranspArEEs & Asset Side Considerations

The actions taken by the EBA and the ECB point clearly to the fact that the way in which banks manage climate and environmental risk will influence the supervisory dialogue, which could translate into SREP measures. While the ECB has indicated that these measures will be qualitative at this stage⁴⁸, it is not unreasonable to assume that banks which do not meet the requirements over the medium to long term in this respect could face quantitative measures i.e. capital add-ons under pillar 2. This would translate into a material risk of additional equity cost in the future.

From the perspective of SME financing, a key challenge for banks in many countries is the scarcity of information on the performance of these entities, which constitute a relevant segment of the EU’s overall economy and whose financing depends on their credit risk assessment, which depends in turn on the information available to the bank. This scarcity of information becomes even more relevant when it comes to ESG-related information, which is crucial for bank-based financing for energy efficiency investments and is currently a key obstacle to the scaling up of this type of lending to SMEs. This concern chimes directly with the challenge highlighted by the EBA from the perspective of the process of supervisory review when a lack of sufficient data makes it difficult to understand the impacts of ESG risks on the performance of financial assets. Indeed, the EBA points to the fact that (p.50) “*whereas ESG data for large corporates are considered to be increasingly available, such data for counterparties such as SMEs, local and regional governments, and companies from developing or emerging markets, are scarcer*”⁴⁹. The EBA goes on to note that “*more consistent and coherent ESG-related reporting by companies could help to enhance the quality and availability of ESG data*”. The EBA notes that the European Commission is endeavouring to address these data concerns, notably by way of the Corporate Sustainability Reporting Directive (CSRD) which will ultimately replace the Non-Financial Reporting

⁴⁸ <https://www.bankingsupervision.europa.eu/press/pr/date/2022/html/ssm.pr220127~bd20df4d3a.en.html>

⁴⁹ https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf

Directive (NFRD). However, as indicated above under the Pillar 3 section of this Report, these data disclosure requirements do not apply to unlisted SMEs.

And it is here in particular, with respect to the lack of sufficient data on SMEs' EE and ESG activities and performance, and the subsequent impacts on risk management, that the TranspArEEnS infrastructure comes to the fore.

Firstly, however, it is important to highlight that the enhanced transparency and standardisation which the TranspArEEnS infrastructure will afford to banks will facilitate the classification and assessment of these SMEs and, as a result, the assessment of their credit risk. On this basis, banks will be able to scale up their lending to SMEs, in particular their EE-ESG lending, responding to the policy objectives in the area of Sustainable Finance. Indeed, through the Renewed Sustainable Finance Strategy published in July 2021⁵⁰, the European Commission has turned its attention to also developing an inclusive sustainable finance framework in which SMEs, alongside citizens, can access sustainable finance opportunities and support the climate transition. This policy agenda from the European Commission inevitably puts the spotlight on retail financial services products and bank lending to SMEs and puts pressure on banks to step up and respond to the inherent 'calls for action' to support the EU's businesses in this transition context. As suggested, the value of TranspArEEnS is apparent here, and also more generally in addressing the broader challenges faced by SMEs in accessing bank finance, both current and future in the context of the COVID-19 pandemic which is expected to put further pressure on SME access to finance.

The TranspArEEnS infrastructure also delivers significant added value in the supervisory context. Indeed, by delivering a level of disclosure on SME exposures which is currently not available and, in line with the EBA's recommendations, specifically supporting the identification and classification of SMEs from a sectoral and geographic perspective, the infrastructure delivers vital information on these factors as EE-ESG risk drivers and allows for the evaluation through the EE-ESG rating of SMEs EE-ESG risk profile, as a complement to existing financial and economic information. This in turn will support better informed client analysis and credit decision-making, integration of these factors into banks loan granting and monitoring processes, and therefore overall enhanced risk management, aligned with the ECB's supervisory expectations. It is important to highlight here that TranspArEEnS will equally support banks in auditing and 'greening' their existing SME loan portfolios, by delivering a benchmark against which these loans can be measured and tagged.

The overall significance for banks of the TranspArEEnS infrastructure in the context of pillar 2 of the supervisory framework is the fact that greater transparency on the EE and ESG credentials of SME exposures will help manage the dialogue with supervisors and mitigate the potential for any additional SREP measures, whether they be quantitative or potentially qualitative in the future.

Beyond the added-value of the TranspArEEnS infrastructure in terms of the structured and standardised collection of currently unavailable information on SMEs' EE-ESG credentials which will also support banks in meeting their Pillar 3 disclosure requirements, another significant innovation which is particularly relevant in this area relates to the fact that that TranspArEEnS will facilitate, for the first time, the collection of firm-based information about one of the three main pillars of the EU Taxonomy, i.e. the identification of SMEs' activities that substantially contribute to one of the six environmental objectives. As such, it will help firms, and thus investors to understand their degree of compliance with the EU Taxonomy regulation. Taken together, these outcomes will greatly support those SMEs wishing to voluntarily disclose their Taxonomy-alignment with a view to increasing their viability from an EE-ESG investment perspective, banks in disclosing the BTAR in the short term and those wishing to

⁵⁰https://eur-lex.europa.eu/resource.html?uri=cellar:9f5e7e95-df06-11eb-895a-01aa75ed71a1.0001.02/DOC_1&format=PDF

disclose their taxonomy-aligned SME exposures through the GAR in due course (subject to a positive assessment in this respect from the European Commission).

In this respect, intrinsically, the TranspArEEs infrastructure also responds to the European Commission's commitment in its Renewed Sustainable Finance Strategy to support Member States in their efforts to provide capacity building and technical advice on how SMEs can voluntarily report on sustainability risks and impacts. Indeed, as outlined under the Pillar 3 section of this Report, SMEs are currently not subject to the reporting requirements of the NFRD/CSRD but there are benefits to both SMEs and, as a result, banks in reporting on their credentials, and doing so as quickly as possible.

4.2 TranspArEEs & Liabilities Side Considerations

As indicated, the TranspArEEs survey, database and EE-ESG rating will greatly enhance the availability of standardised and transparent information on SMEs' EE-ESG credentials, as a complement to information on their financial and economic performance, and therefore support analysis of the credit performance of SME loans. A more robust understanding of the profile of SMEs could make an important contribution to unlocking the potential in general terms of ESNs, offering a wide range of benefits for issuers, investors, SMEs themselves, as well as supporting overall economic recovery from the COVID-19 pandemic and contributing to future growth.

Interestingly from the specific EE-ESG perspective of TranspArEEs and against a background of increasing attention from investors on ESG factors, Latham & Watkins note *"there is potential for SME ESNs to serve as a funding instrument for banks that is aligned with ESG objectives"*. Latham & Watkins suggest that ESNs could, for example, attract a social label, through their focus on funding an economic sector that traditionally faces challenges in accessing credit. As far as the 'green' agenda is concerned, the authors suggest that *"depending on the issuing bank's underwriting strategy, SME ESNs may be welcomed as yet another sustainable finance instrument that could further leverage private capital for ESG aims"*. With the innovation that TranspArEEs brings through its focus on EE and ESG, its infrastructure could be additionally supportive of ESN developments along a 'green' and 'social' pathway.

The infrastructure could furthermore support issuers in meeting, for example, the disclosure requirements proposed by the EBA for ESNs and reinforce regulatory trust and confidence in ESNs in due course at a time when there is increasing focus on the impact of climate and environmental risks on banks' balance sheets linked to their exposures. This could, conceivably, based on a robust track record, lead to a more favourable treatment of ESNs from a regulatory perspective over time.

Remaining on the potential treatment of this instrument, in the context of its monetary policy strategy, since 2014 the European Central Bank has engaged in three covered bond purchase programmes (CBPP) as part of a package of stimulus measures for a variety of policy and macroeconomic reasons. Additionally, covered bonds are subject to other specific treatments in this area, notably that the ECB accepts retained covered bonds as collateral, treatments which are not extended to senior unsecured or securitisation bonds. In their Client Alert Commentary entitled *"European Secured Notes: Coming to a Bank Near You?"*, Latham & Watkins suggest that similar initiatives could be extended in the future to a European ESN initiative⁵¹. This would be significant because not only would it support the transmission of monetary policy with its focus on SMEs, but it would serve to drive investor appetite and therefore development of the market in ESNs, delivering a virtuous circle with the benefits for market participants, financial stability and economic growth described earlier. Indeed, as Richard Kemmish suggests in his Feasibility Study on ESN for the European Commission from 2018, *"clearly, as with the treatment of ESNs in LCR ratios, the treatment of ESNs in central bank monetary operations*

⁵¹ <https://www.lw.com/thoughtLeadership/lw-European-Secured-Notes-Coming-to-a-Bank-Near-You>

*is of considerable significance to investors*⁵². (P.56) This chimes with the EBA's own findings which suggest that *"From an investor perspective, among the main drivers of interest, (i) the risk-return profile of the instrument and (ii) the regulatory treatment of the product would be keys. In this regard, the treatment under the LCR and ECB collateral frameworks would be significant for the development of an ESN market"*⁵³. TranspArEEs will be instrumental in underpinning the ESN instrument and therefore supporting and potentially accelerating this evolution. R. Kemmish (2018) goes on to note, *"we anticipate that well-rated ESNs are likely to become eligible collateral at the ECB with similar treatment to traditional covered bonds subject to the approval of the national central bank of the issuer"*. (P. 57) Another Report in this series will consider the business case for ESN, in particular EE-ESG ESN, with a focus on appropriate regulatory treatment, issuer and investor rationale, and eligibility and transparency criteria.

It is also worth noting here that at the time of writing the European Parliament and the Council of the EU are negotiating the draft Regulation for an EU Green Bond Standard⁵⁴ which aims to stimulate the green bond market and provide a regulated environment for green bonds. This is intended to boost issuance and help companies and public authorities to use green bonds to raise funds on European capital markets. This is in turn intended to boost the Capital Markets Union and the EU's financial markets as a hub for sustainable finance. Significantly, the Standard will require Taxonomy alignment of the use of the proceeds of the green bond and disclosure of this. Here again, TranspArEEs has the potential to support issuers of future EE-ESG ESNs, through its collection and identification of SMEs' activities that are aligned with the Taxonomy, which will in turn facilitate investor due diligence.

A final consideration here is that the TranspArEEs infrastructure, by making the EE-ESG performance and activities of the SME 'visible', through standardisation and transparent collection and disclosure, could, over the longer term, also make it easier for SMEs to access EE-ESG financing through public markets directly, an objective which is at the heart of the European Commission's Capital Markets Union strategy⁵⁵.

4.3 TranspArEEs & Monetary Policy Operations

With its direct link to the EU Taxonomy and its overall focus on delivering information on SMEs' EE-ESG performance and activities, the TranspArEEs infrastructure could be instrumental over time in supporting potential eligibility of ESN bonds for 'green' asset purchase programmes. Equally, the standardisation and transparency afforded by TranspArEEs will help banks to demonstrate the overall EE-ESG credentials of their SME loan books, supporting current access to the TLTROs, as well as future access should steps be taken to 'green' these as part of the ECB's climate-change related activities.

In this respect, TranspArEEs therefore has the potential to support the overall effectiveness of the ECB's objectives of ensuring the transmission mechanism of monetary policy and ensuring price stability, which are fundamental for the overall health of the EU economy. At the same time and as described earlier above, by supporting the eligibility of financial instruments in monetary policy operations, TranspArEEs supports the development of a virtuous circle of market development in these instruments, in a context where eligibility of this kind is an important driver of investor demand.

⁵²<https://op.europa.eu/en/publication-detail/-/publication/eba761b4-d026-11e8-9424-01aa75ed71a1>

⁵³<https://www.eba.europa.eu/sites/default/documents/files/documents/10180/2087449/6fe04a31-ec0b-4ea1-9508-258ad2cf72d8/EBA%20Final%20report%20on%20ESNs.pdf?retry=1>

⁵⁴ <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32019R2088>

⁵⁵ https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/what-capital-markets-union_n1#package

Finally, and as indicated earlier under the funding section of this Report, the TranspArEEnS infrastructure also has the longer-term potential to support SMEs in the issuing of corporate bonds to finance their activities. Given the current focus of the greening of the asset purchase programmes on corporate bonds, the EE-ESG focus of TranspArEEnS would in turn support SMEs in achieving eligibility of their issuances.

Conclusion

Improving access to long-term finance for energy efficiency projects is key to achieving the EU's 2030 targets, as well as securing a 'green' recovery from the COVID-19 pandemic in support of the EU Green Deal and supporting urgent efforts to secure the EU's energy independence. However, the lack of information on the EE-ESG credentials of SMEs' performance and activities limits access to energy efficiency financing. As described, TranspArEEnS addresses these barriers by designing and mainstreaming a quali-quantitative framework for standardised collection and analysis of firms' EE and ESG information and the development of a standardised EE-ESG rating. This is intended to serve as an EE-ESG filter which can inform and guide financial decisions and investment. Specifically from a bank perspective, the greater transparency and standardisation afforded by the TranspArEEnS infrastructure will deliver three main benefits:

- Firstly it will support an increase in bank lending to SMEs, both in EE-ESG terms and potentially in general, by greatly facilitating 'due diligence' in lending to these firms through enhanced evaluation of their credit risk, based on access to transparent and standardised information and clearer classifications of their activities. The EE-ESG rating will help to mitigate the risk of greenwashing and in this way preserve the conditions for individual and systemic financial stability.
- Secondly, this infrastructure will help banks' to 'green' their existing SME loan portfolios, by delivering a benchmark against which these loans can be measured and tagged.
- Thirdly, it will support the issuance of long-term funding instruments, including European Secured Notes (ESN), which will be explored in a separate Report in this series.

Inherently, these benefits will also support banks in responding to the interconnected, complex and evolving regulatory and supervisory landscape in relation to Sustainable Finance which will influence and shape their lending and funding activities in the months and years to come.

Overall, it is anticipated that these outputs will give rise to a virtuous circle for lending institutions, bond issuers, investors and SMEs themselves, scaling up energy efficiency lending and investment. It will furthermore support regulators and supervisory authorities in their policy and monetary policy agendas and strategies. Taken together, these outputs have strong potential to be transformative in the wide-spread and large-scale efforts to transition to a more sustainable economy and society.

References

- European Commission. (2020). Financing the green transition: The European Green Deal Investment Plan and Just Transition Mechanism. European Commission Press Corner
https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1
- European Commission. (2020). In focus: Energy efficiency in buildings
https://ec.europa.eu/info/news/focus-energy-efficiency-buildings-2020-lut-17_en
- OECD (2018). Issue Paper SMEs: Key Drivers of Green and Inclusive Growth
https://www.oecd.org/greengrowth/GGSD_2018_SME%20Issue%20Paper_WEB.pdf
- European Commission. (2019). EU Action Plan: Financing Sustainable Growth.
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN>
- European Commission: Internal Market, Industry, Entrepreneurship and small and medium-sized enterprises (SMEs), Access to Finance.
https://ec.europa.eu/growth/access-finance_en
- OECD. (2020). Policy Responses to Coronavirus (COVID-19).
<https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/>
- Albaz, A., Mansour, T., Rida, T., Schubert J., McKinsey & Co. (2020). Setting up small and medium-size enterprises for restart and recovery.
<https://www.mckinsey.com/~media/McKinsey/Industries/Public%20Sector/Our%20Insights/Setting%20up%20small%20and%20medium%20size%20enterprises%20for%20restart%20and%20recovery/Setting-up-small-and-medium-size-enterprises-for-restart-and-recovery-vF.pdf>
- OECD (2021). Business at OECD: Policy recommendations for SME recovery and long-term resilience
<https://biac.org/wp-content/uploads/2021/06/Business-at-OECD-policy-paper-for-SME-recovery-and-longer-term-resilience-1.pdf>
- European Banking Authority (EBA). 2021. Risk Assessment of the European Banking System.
https://www.eba.europa.eu/sites/default/documents/files/document_library/Risk%20Analysis%20and%20Data/EU%20Wide%20Transparency%20Exercise/2021/1025102/Risk_Assessment_Report_December_2021.pdf
- European Central Bank (ECB). (2020) Access to finance for small and medium-sized enterprises since the financial crisis: evidence from survey data, ECB Economic Bulletin, Issue 4/2020
https://www.ecb.europa.eu/pub/economic-bulletin/articles/2020/html/ecb.ebart202004_02~80dcc6a564.en.html#toc8
- ECB List of supervised banks
<https://www.bankingsupervision.europa.eu/banking/list/html/index.en.html>
- Johnson, J., Bertalot, L. (2021). Regulatory and Supervisory Landscape relative to energy efficient mortgages
<https://energyefficientmortgages.eu/wp-content/uploads/2022/01/Analysis-of-Regulatory-Supervisory-Landscape-relative-to-EEM-012.pdf>

European Commission. (2013). Regulation (EU) 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (Text with EEA relevance)

<https://eur-lex.europa.eu/eli/reg/2013/575/oj/eng>

Baccega, T., Bedin, A., Billio, M., Hristova, I., Riedel, M. (2019). Technical Report on Econometric Assessment & Results

<https://energyefficientmortgages.eu/wp-content/uploads/2021/07/BE-IT-NL-UK-Correlation-Analysis.pdf>

Billio, M., Costola, M., Fumarola, S., Hristova, I., Pelizzon, L., Portioli, F., Riedel, M. & Vergari, D. (2020). Final report on correlation analysis between energy efficiency and risk.

<https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Italian-Correlation-Analysis.pdf>

Billio, M., Costola, M., Pelizzon, L., & Riedel, M. (2020). Buildings' Energy Efficiency and the Probability of Mortgage Default: The Dutch Case. University Ca'Foscari of Venice, Dept. of Economics Research Paper Series No, 6.

<https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Extended-Dutch-Correlation-Analysis.pdf>

European Commission. (2003). European Commission Recommendation 2003/361/EC of 6 May 2003 concerning the Definition of micro, small and medium-sized enterprises.

<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:en:PDF>

European Commission. (2021). Strategy for Financing the Transition to a Sustainable Economy

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0390>

European Central Bank (ECB). The Supervisory Review and Evaluation Process

<https://www.bankingsupervision.europa.eu/banking/srep/html/index.en.html>

European Central Bank (ECB). Pillar 2 Guidance

<https://www.bankingsupervision.europa.eu/banking/srep/html/p2g.en.html>

European Banking Authority (EBA). (2021). Report on Management of ESG Risks & Supervision for Credit Institutions & Investment Firms.

https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf

European Central Bank (ECB). (2020). Guide on climate-related and environmental risks: supervisory expectations relating to risk management and disclosure.

<https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf>

KPMG. (2020). Climate related and environmental risks: Overview of the ECB's recently published draft guide on climate-related and environmental risks.

<https://assets.kpmg/content/dam/kpmg/de/pdf/Themen/2020/06/climate-related-and-environmental-risk.pdf>

European Central Bank (ECBC). (2021). "Banks must accelerate efforts to tackle climate risks, ECB supervisory assessment shows". Press Release

<https://www.bankingsupervision.europa.eu/press/pr/date/2021/html/ssm.pr211122~6984de0ae5.en.html>

European Banking Authority (EBA). (2022). EBA Final draft implementing technical standards on prudential disclosures on ESG risks in accordance with Article 449a CRR.

https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Draft%20Technical%20Standards/2022/1026171/EBA%20draft%20ITS%20on%20Pillar%203%20disclosures%20on%20ESG%20risks.pdf

European Banking Authority (EBA). (2022), EBA advises the Commission on KPIs for transparency on institutions' environmentally sustainable activities, including a green asset ratio

<https://www.eba.europa.eu/eba-advises-commission-kpis-transparency-institutions%E2%80%99-environmentally-sustainable-activities>

European Commission FAQ: What is the EU Taxonomy Article 8 delegated act and how will it work in practice?

https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/sustainable-finance-taxonomy-article-8-faq_en.pdf

Schuller, M., Brosens, T., Kosonen, S.P. ING. (2022) Perfecting ESG disclosures via the banking book taxonomy alignment ratio.

<https://think.ing.com/articles/bank-pulse-btar-to-supplement-gar-as-taxonomy-alignment-measure#a6>

European Commission. (2021). European Commission Delegated Regulation supplementing Regulation (EU) 2020/852 by specifying the content and presentation of information to be disclosed by undertakings subject to Article 19a or 29a of Directive 2013/34/EU concerning environmentally sustainable economic activities, and specifying the methodology to comply with that disclosure obligation.

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R2139&qid=1639037016630>

ECBC. European Secured Notes (ESN)

<https://hypo.org/ecbc/market-initiative/european-secured-note/>

European Commission. (2017). Call for Advice to the EBA on the European Secured Notes (ESN)

<https://www.eba.europa.eu/sites/default/documents/files/documents/10180/1983643/b65d19ed-6b2b-427e-b183-47352c59ede7/Call%20for%20advice%20to%20the%20EBA%20on%20European%20Secured%20Notes.pdf?retry=1>

European Central Bank (ECB). (2021). "ECB presents action plan to include climate change considerations in its monetary policy strategy".

https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html

Rahill, T, Schuller, M. ING. (2021). ECB – Smoking out fossil fuels. Economic & Financial Analysis

<https://think.ing.com/articles/ecb-smoking-out-fossil-fuels/#a10>

Speech of Christine Lagarde at Monetary Dialogue between European Parliament Committee on Economic & Monetary Affairs and Christine Lagarde, President of the ECB, 28 September 2020

https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200928_2_transcript~aae0db0fa5.en.pdf

Batsaikhan, U., Jourdan, S. Positive Money. (2021). Money looking for a home: How to make the European Central Bank's negative interest rates pay for building renovations.

http://www.positivemoney.eu/wp-content/uploads/2021/02/2021_Building-Renovation-TLTROs.pdf

European Banking Authority. (2018). EBA Report on The European Secured Notes (ESNs) <https://www.eba.europa.eu/sites/default/documents/files/documents/10180/2087449/6fe04a31-ec0b-4ea1-9508-258ad2cf72d8/EBA%20Final%20report%20on%20ESNs.pdf?retry=1>

Latham & Watkins. (2020) “European Secured Notes: Coming to a Bank Near You?”, Client Alert Commentary. <https://www.lw.com/thoughtLeadership/lw-European-Secured-Notes-Coming-to-a-Bank-Near-You>

Kemmish, R. (2018). Feasibility study on European Secured Notes: Final Report <https://data.europa.eu/doi/10.2874/904691>

European Commission (2021). Proposal for a Regulation of the European Parliament and of the Council on European Green Bonds. https://eur-lex.europa.eu/resource.html?uri=cellar:e77212e8-df07-11eb-895a-01aa75ed71a1.0001.02/DOC_1&format=PDF