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Banco de España supervisory expectations relating to the risks posed by climate change and environmental degradation

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1 Introduction

Climate change and environmental degradation constitute a global concern that is prompting initiatives in various arenas. The 2015 Paris Agreement¹ and the Intergovernmental Panel on Climate Change² are examples of such initiatives and reflect the need to take measures to keep global warming well below 2°C above pre-industrial levels. Attaining this goal involves reducing greenhouse gas emissions considerably over the coming decades.

In December 2019, the European Commission unveiled the European Green Deal, which contains a set of measures geared towards making Europe climate neutral by 2050. This initiative is in addition to the Commission action plan on financing sustainable growth,³ which develops a European Union (EU) sustainable finance strategy for integrating environmental, social and governance (ESG)⁴ factors into the European financial system.

In Spain various actions geared towards achieving the established emissions reduction targets have been included in the draft climate change and energy transition law.

The implementation of the measures required to transition to a low-carbon economy that preserves the environment and protects against the physical risks posed by climate change and environmental events is creating new risk factors. These have attracted supervisors' and central banks' attention. Both are therefore adding to their work agendas analysis of the financial risks associated with climate change and environmental degradation.

On this front, mention should be made of the work conducted by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS),⁵ currently consisting of 74 members (including the Banco de España) and 13 observers.⁶ The Basel Committee on Banking Supervision, an NGFS observer, has also started work on climate-related financial risks, creating a high-level Task Force.

¹ See United Nations (2015), Paris Agreement.

² See United Nations (2018), "Summary for Policymakers", in Global Warming of 1.5°C, Intergovernmental Panel on Climate Change.

³ See European Commission (2018), *Action Plan: Financing Sustainable Growth*.

⁴ According to the European Commission's 2018 *Action Plan: Financing Sustainable Growth*, environmental considerations refer to climate change mitigation and adaptation, as well as the environment more broadly and related risks (e.g. natural disasters). Social considerations may refer to issues of inequality, inclusiveness, labour relations, investment in human capital and communities. The governance of public and private institutions, including management structures, employee relations and executive remuneration, plays a fundamental role in ensuring the inclusion of social and environmental considerations in the decision-making process.

⁵ Of particular relevance to these expectations is the *Guide for Supervisors: integrating climate-related and environmental risks into prudential supervision*, published by the NGFS in May 2020, specifically Recommendation 4: "Set supervisory expectations to create transparency for financial institutions regarding the supervisors' understanding of a prudent approach to climate-related and environmental risks".

⁶ As at October 2020.

Furthermore, the European Banking Authority (EBA) is responsible for delivering various mandates to incorporate ESG risks into the regulatory and banking supervision framework. Thus, in December 2019 it published its Action Plan on Sustainable Finance,⁷ specifying these mandates and their related deadlines, encouraging institutions to be proactive and integrate ESG risks into their business strategies, risk-management processes and disclosures without waiting for the regulatory framework to be completely finalised.

Likewise, in 2019 the European Central Bank (ECB) identified climate change-related risks in its Risk Map⁸ for the first time and incorporated them into one of its basic tools for determining its supervisory priorities. On 20 May 2020, the ECB launched a public consultation on a guide⁹ on climate-related and environmental risks for significant institutions under its direct supervision. In this guide, which the Banco de España helped prepare, the ECB acknowledges that a number of national competent authorities (NCAs) have issued, or are in the process of issuing, guidance on climate-related and environmental risks and invites less significant institutions to consider both the ECB's expectations and those of their NCAs.

The Banco de España has been party to these debates and is mindful of the energy transition's implications for Spanish credit institutions.¹⁰ In this regard, and besides its participation in a number of international fora and bodies, it has developed various public initiatives in order to help raise the banking sector's awareness and boost its preparedness. In 2019 it conducted a survey among a representative sample of Spanish institutions in order to analyse whether ESG risks, in general, and the risks posed by climate change and environmental degradation, in particular, were being taken into consideration.

This document represents another step towards the common goal set by the aforementioned initiatives, as it makes publicly known the Banco de España's expectations relating to the consideration of the risks posed by climate change and environmental degradation in the strategies, business models, governance, risk management and disclosures of the credit institutions it supervises. These expectations focus on the risks posed by climate change and environmental degradation, since this is the area where the most headway has been made internationally to date. However, social and governance-related risks are deemed to be of key importance and institutions should consider them duly.

While these expectations focus on management of the risks posed by climate change and environmental degradation, the transition process opens up new opportunities for

⁷ See EBA (2019), EBA Action Plan on Sustainable Finance.

⁸ See ECB (2020), *SSM Risk Map for 2020*.

⁹ See ECB (2020), *Public consultation on the draft ECB Guide on climate-related and environmental risks*.

¹⁰ See, for example, M. Delgado (2019), "Energy transition and financial stability. Implications for the Spanish deposit-taking institutions", *Financial Stability Review* No 37, Autumn, Banco de España.

institutions. Appropriately managing risk and identifying opportunities will help drive the energy transition.

Aside from the headway made in this area, the as yet incipient incorporation of climate change and environmental degradation-related risks into the regulatory and supervisory framework, international developments in this connection and progress made by institutions themselves to enhance their management (see Box 1) mean that these supervisory expectations should be deemed a living document that will be amended in the future as and when necessary.

Box 1. Spanish Collective Commitment to Climate Action¹¹

On the occasion of the UN Climate Change Conference (COP25) held in Madrid in 2019, 23 credit institutions operating in Spain and accounting for 95% of the Spanish banking sector made a collective commitment to climate action. Its main objective is to smooth the transition to a low-carbon economy.

It states, inter alia, that within three years the institutions will have set and published the sector-specific, scenario-based targets for aligning their portfolios with the Paris Agreement goals.

Furthermore, the institutions pledge to work together to develop the necessary methodologies to measure the climate impact of their clients' activities on their balance sheets and to share experiences in order to improve and deepen the measurements.

Lastly, they undertake to make every effort to dovetail with international standards and best practices in this regard.

2 Subject matter and scope

These supervisory expectations are aimed at explicitly setting out how the Banco de España considers that institutions should progress in order to take account of the risks posed by climate change and environmental degradation (when they consider them to be material) in their business model and strategy, governance, risk management and disclosures to third parties.

The Banco de España is aware of the different degree to which climate and environmental risks have been incorporated by institutions and of the existing methodological and data availability challenges. Consequently, these expectations are not binding or subject to the “comply or explain” principle. Owing to the growing importance of these risks, the idea behind these expectations is to guide and encourage institutions to reflect on the moves that they will progressively have to make.

¹¹ See Spanish Banking Association (AEB by its Spanish initials), Spanish Confederation of Savings Banks (CECA by its Spanish initials) and Official Credit Institute (ICO by its Spanish initials) (2019).

Moreover, taking into account the novel nature of this field, the Banco de España considers that institutions require sufficient time to deploy the knowledge acquired on these risks through the relevant international projects, as signatories to the collective commitment made at COP25, and through the analysis of their own business. Therefore, the Banco de España does not expect institutions to implement all these expectations from the outset. Instead, it expects to begin analysing institutions' progress in this regard 18 months after their publication, so that, on this basis — and as part of the supervisory dialogue —, their progress, the difficulties encountered and the areas for improvement can be assessed.

These expectations are addressed to consolidated groups of credit institutions and to credit institutions not belonging to one of these consolidated groups that are established in Spain and considered less significant under Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions. This does not mean that the institutions excluded from the scope will not find them useful as part of their analysis for tackling the challenges associated with the risks posed by climate change and environmental degradation.

The Banco de España expects the content of the expectations to be considered in a proportional manner. The proportionality principle shall be understood according to the nature, size and complexity of the institutions and of the risks inherent in their business model and activities.

These expectations should not be understood as guidelines covering each and every aspect required for implementing a comprehensive approach to environmental and climate risk management. In any event, institutions are responsible for designing a management strategy that allows for a more effective and prudent consideration of the risks posed by climate change and environmental degradation.

3 General definitions

Climate change and environmental degradation essentially translate into financial risks through two transmission channels: physical risks and transition risks.¹²

Physical risks are those posed when climate change has already begun to materialise. They therefore arise from the impact of extreme weather events (e.g. heatwaves and floods), as well as longer term progressive shifts of the climate (changes in precipitation and rising sea levels, among others). These risks could damage the business sectors to which institutions are directly or indirectly exposed and the assets used as collateral, particularly real estate. Examples of climate change-related physical risks materialising would be a drought affecting the agricultural sector and falling valuations of mortgage-loan collateral (specifically, housing) in coastal areas in the event of rising sea levels. In addition,

¹² See NGFS (2019), *A call for action. Climate change as a source of financial risk. First comprehensive report.*

environmental disasters (waste spills, deforestation, etc.) may cause lasting physical damage affecting various sectors.

Transition risks are those stemming from shifting and adapting to a more sustainable economy. These could affect, for example, institutions exposed to customers whose core business is fossil-fuel intensive, to firms that have no recycling policy, and to the value of collateral (specifically, housing), since households' contribution to total emissions is notably dependent on the energy efficiency of properties. This transition, which to some extent would help mitigate the aforementioned physical risks, could be triggered by public and private measures to combat climate change, the emergence of new greener technologies and even consumer preferences shifting away from browner products. For example, a tax on CO2 emissions or the development of a disruptive technological innovation could prompt the reallocation of business volumes among firms, strengthening some sectors and weakening others.

The aforementioned risks will materialise through their impact on the risks traditionally managed by credit institutions, specifically, credit risk, market risk, liquidity risk and operational risk. However, financial supervisors¹³ agree in underscoring that these risks have distinctive characteristics that make them a challenge to manage:

- Far-reaching impact in breadth and magnitude since they affect all agents in the economy, across all sectors and geographies.
- Uncertain time horizon, although there is a high degree of certainty that these risks will materialise (indeed, some already are).
- Above a certain threshold, they will have irreversible consequences.
- The magnitude and nature of the future impacts will be determined by the mitigating actions taken in the immediate term.

Furthermore, the interconnectedness of physical and transition risks, particularly over long time horizons,¹⁴ serves only to make managing them more complex. In other words, applying measures to mitigate climate change and environmental degradation may admittedly initially incur costs for firms, yet it will help reduce medium and long-term physical risks.

¹³ See, for example, NGFS (2019), *A call for action. Climate change as a source of financial risk. First comprehensive report*.

¹⁴ A combination of possible scenarios resulting from the economic transition process associated with climate change and the intensity of the attendant policy response can be found in Box 3.1, "The financial system and climate change", *Financial Stability Report*, Autumn 2019, pp. 115-119.

4 Business model and strategy

An institution's ability to generate profits depends on the viability and sustainability of its business model and the chosen strategy.

One key aspect that must be factored into any viable and sustainable long-term business plan is the business environment in which the institution operates. That business environment encompasses a multitude of external factors, including most notably the macrofinancial scenario, competition, the regulatory framework, technological developments and demographic, social and geopolitical trends.

Many of these elements may be affected by climate risks and environmental degradation. In particular, such risks may have a bearing on the development of certain economic sectors or on firms' productive models, and, consequently, affect economic growth and employment nationally, regionally or locally. Ultimately, this could impact institutions' activity, income statement and solvency.

Strategy is key to positioning an institution within the business environment in which it operates so as to obtain sustainable earnings, in keeping with its risk appetite, in the short and long term. Climate and environmental risks may impact institutions' strategies and, accordingly, should be taken into account.

The Banco de España expects institutions to include in their strategy, business model and risk appetite framework those risks posed by climate change and environmental degradation that they consider potentially material in both the short and long term. Specifically, institutions may take into account aspects including the following:

- Business environment. Given their unique characteristics, so as to properly assess the impact of climate and environmental risks, and duly factor them into their business models, institutions may have to consider longer time horizons than traditionally used in their strategic planning (typically 3 to 5 years).¹⁵ Likewise, since the impact of these risks is unlikely to be uniform across the economy, it would be preferable for institutions to identify, based on their specific characteristics, the risks' impact in sufficient granularity, distinguishing between the main economic sectors and geographical areas where they pursue their economic activity, and likewise between the most significant products and services. Adequate assessment of the business environment will also be important for those institutions whose businesses are concentrated in a specific geographical area or economic sector. This risk identification and assessment process should be dynamic so as to include any behavioural changes among firms (and households).

¹⁵ In order to include climate and environmental risks in their strategic plans, institutions could use time horizons aligned with the relevant public policies, such as the EU's 2030 Climate Target Plan.

- Key performance indicators. Institutions could incorporate the material climate and environmental risks into their business strategies by defining and monitoring key performance indicators for their main business lines. These should be duly included and documented in their policies. By way of example, such indicators could include: (i) exposure to economic activities and geographical areas vulnerable to physical and transition risks; (ii) the carbon footprint of their investments; (iii) the volume of guarantees relating to assets or activities in sectors that contribute towards mitigating climate and environmental risks; (iv) the percentage of assets under management that have been selected on the basis of the institution's sustainable investment policies; (v) the total amount of fixed income portfolios invested in green bonds;¹⁶ and (vi) the amount and relative importance of collateral, in particular real estate, that may be vulnerable to physical and transition risks.
- Scenario analysis and stress testing. In order to assess the medium and long-term sustainability and resilience of their business models and strategies, institutions, based on their own particular characteristics, can be expected to assess and press forward with the development and use of tools such as scenario analysis and stress testing (see Section 6.2).
- Risk appetite framework. The risk appetite framework should explicitly include climate and environmental risks on the basis of their materiality and the institutions' particular characteristics. Accordingly, this framework should include a description of these risks and their potential medium and long-term impact, along with the institutions' level of tolerance to them.

5 Corporate governance

It is vital that the institutions have robust corporate governance procedures and systems to provide for their efficient and prudent management. In particular, the new challenges associated with climate and environmental risks pose the need for progressive adaptation of the institutions' organisational structure and internal governance.

The board of directors plays a pivotal role here. This is the corporate body ultimately responsible for the institution's general business strategy, key policies, internal structure and organisation, and corporate culture and values.

The Banco de España expects institutions' boards to take ultimate responsibility for including the risks posed by climate change and environmental degradation in their general strategy, proportional to their materiality, and to establish the required review mechanisms. Likewise, it expects boards to duly incorporate these risks into their

¹⁶ Green bonds are typically understood to be bonds whose funds are earmarked for financing projects directly related to sustainability, preserving natural resources and the transition to a low-carbon economy. The EU is currently working on an EU Green Bond Standard.

institutions' organisation. Specifically, the following considerations, among others, may be taken into account:

- Adequate knowledge. In the interest of informed decision-making, the board of directors should ensure that it has the appropriate collective knowledge to duly understand the implications of climate and environmental risks for the institution's business model and strategy.
- Information. Sound decision-making by the board of directors likewise depends on the availability of adequate information. Therefore, the board is responsible for defining and establishing the necessary mechanisms to ensure that it receives, with the desired frequency, all the relevant information on climate and environmental risks.
- Clear allocation of responsibilities. Once the climate and environmental risks have been included in the institution's strategy, the board of directors should ensure that the decision is effective throughout the organisation by defining and establishing clear reporting lines, taking into consideration the implications for business areas, control functions and internal audit. Depending on their nature, institutions may establish specific committees for these risks or assign the related functions to one or more existing committees.
- Adequate resources and means. The board of directors should assess the resource requirements in terms of their number, expertise and experience in climate and environmental risk matters, based on the specific circumstances of each institution.

6 Risk management

Risk management is a key function in the organisation of credit institutions, responsible for ensuring that all material risks assumed by the institution are correctly identified, measured, controlled and mitigated. The risk level that an institution is willing to assume must be reflected in its risk appetite framework.

Although climate and environmental risks are distinct in nature, their impact – see Section 3 – materialises through traditional risks, in particular credit, market, liquidity and operational risk. It would therefore be expedient to incorporate the risks into existing management procedures, taking a comprehensive approach.

The Banco de España expects institutions to consider the risks posed by climate change and environmental degradation seamlessly within its existing risk management procedures and to adopt a comprehensive approach to their identification, assessment, monitoring and mitigation. To this end, they should envisage, insofar as is necessary, a sufficiently long time horizon.

6.1 Risk identification, measurement, mitigation and monitoring

The Banco de España expects institutions to incorporate in their internal capital and liquidity adequacy assessment processes (ICAAP and ILAAP) those risks posed by climate change and environmental degradation that are considered material and that may generate economic losses or deplete their capital and/or liquidity. Specifically, institutions should identify such risks where they are material. Further, they should begin to consider using tools and methods to measure, assess and monitor the impact of climate and environmental risks on a broad set of components, such as the following:

- Their credit portfolios, through higher probability of default and lower collateral valuations.
- Their investment portfolios, owing to assets losing value and heightened volatility.
- Their daily activity, ensuing from the potential impact of physical risks on their offices and operational centres, and likewise the premises of essential service providers.
- Their reputation, insofar as the activities in which they are involved may be considered, by society or consumers, controversial from a climate and environmental standpoint.
- Their liquidity, owing to potential problems stemming from, for example, a severe climate event in a relevant geographical area for the institution.

Likewise, for the purposes of progressively identifying and assessing the impact of climate and environmental risks, other relevant aspects that institutions should consider are the gradual adaptation of their risk classification and collateral valuation processes, pricing policies and the use of tools such as indicators, scenario analysis and stress testing vis-à-vis those climate risks (see Section 6.2).

In any event, when an institution concludes that these risks are not sufficiently material, a clear and reasoned explanation for this should be included in their ICAAP/ILAAP.

With a view to monitoring and mitigating the risks posed by climate change and environmental degradation, the Banco de España expects institutions to regularly define and assess, as part of their general policies and procedures, adequate controls based on their business strategy, risk appetite and particular characteristics.

6.2 Scenario analysis and stress testing

The existing scenario analysis and stress testing frameworks provide a sound methodological basis for assessing the impact of environmental and climate risks on

institutions' strategies and risk profiles. However, key aspects of these and, in particular, the macrofinancial stress scenarios used will have to be adapted to capture the associated physical and transition risks.

Several domestic and international organisations¹⁷ are currently pursuing initiatives to adapt these tools to the specific features of climate and environmental risk. The Banco de España is aware that the scenario analysis and stress testing methodologies will mature as authorities and institutions alike gain greater knowledge. Additionally, one of the main challenges when conducting such exercises is the availability of adequate data to allow the financial impact of the environmental risk scenario to be estimated in sufficient detail.

The Banco de España expects institutions to explore and progressively press ahead with the use of scenario analysis and stress test exercises, in accordance with their own particular characteristics, capabilities and circumstances. These tools are particularly important for such risks, given that there is no past experience of changes of this nature. The past is therefore of little help in predicting the future. For illustrative purposes, Box 2 details a possible general framework for developing a climate change stress test exercise.

Box 2. Stress tests for the risks posed by climate change and environmental degradation

Stress tests for assessing the impact of the materialisation of climate and environmental risks could follow a comparable framework to the methodologies in place for other risks, provided the specific features of these risks are taken into account. First, the risks to be included in the exercise and the related time horizon must be determined, and the adverse scenarios' narrative must be defined.

Next, the effect of the risks included in the narrative is translated into the main macroeconomic variables generally included in stress testing exercises (GDP, house prices, inflation, unemployment rate, etc.).¹⁸ In the case of physical risks, these shocks should be defined with some level of geographical and sectoral breakdown. For example, if the risk narrative for the scenario includes torrential rain, the shocks will be more likely in certain areas and have a greater impact on the specific sectors located in them. In the case of transition risks, the scenario's sectoral dimension is pivotal, as the most polluting sectors will plausibly be more affected by the technological and regulatory transition. The effects on the whole economy of potential changes to economic and, in particular, fiscal policy in response to climate change also need to be factored in. For example, higher taxes on polluting sectors could reduce their profitability, but the aggregate macroeconomic effect would not necessarily be negative if the funds raised were appropriately earmarked for public investment smoothing the technological transition or for easing the tax burden on other more innovative sectors.

¹⁷ In June 2020, the NGFS published a guide with a set of climate scenarios to help explore the impacts of physical and transition risks. The aim was to provide practical advice on using scenarios to assess climate risks to the economy and the financial system. Although it is mainly aimed at central banks and supervisors, it may also be useful to institutions in many respects. See NGFS (2020), *Guide to climate scenario analysis for central banks and supervisors*.

¹⁸ See NGFS (2019), *Macroeconomic and financial stability. Implications of climate change*.

The macrofinancial scenario, generated on the basis of the climate change shocks, must then be translated into impacts on their financial positions and exposures.

To this end, for exposures subject to credit risk, the possible loss of value of collateral and the higher default rates of certain customers, caused by the scenario translating into loss of business, fines, taxes, etc., will be quantified. In other words, a calculation is made of the extent to which the manifestation of climate change risks under the scenario also leads to the materialisation of credit risks, reducing institutions' solvency and profitability. It is also possible to incorporate the positive effect had on the risk profile of customers engaged in new alternative technologies, who could see their activity grow and benefit from more favourable fiscal conditions as part of the transition policies. The distribution of credit risk among sectors of activity and geographical areas should guide the differing impacts on institutions under a given climate crisis scenario. To measure the impact on credit risk, the pre-existing stress testing frameworks that translate adverse macroeconomic scenarios into credit risk can be used, without being particularly affected by the scenario's ultimate cause being a climate shock. Likewise, institutions can use the existing frameworks to model the impact of the macroeconomic scenarios on net operating income, in order to quantify the broadest effect of the scenarios on profitability. Nevertheless, the key sectoral and geographical dimensions for these scenarios will need to be developed insofar as they are not included in existing frameworks.

When assessing market and liquidity risk under the adverse scenario, institutions must also consider the sectoral structure of their portfolio of financial instruments. Concentration in declining sectors with obsolete activities and technologies or in sectors that have to adapt to agents' new preferences or to new regulations may reduce the marketable value of such instruments, or erode their consideration as liquid assets, even in the absence of credit events.

Lastly, extreme events may occur associated with the materialisation of climate change risks that, besides their indirect effect, have a direct impact on institutions via a downturn in the macrofinancial environment. Such risks should be included in the operational risk assessment; for example, physical risks may affect an institution's very activity owing to the location of office buildings or operational centres in an area that is more exposed to disasters. Furthermore, transition risks can increase financial institutions' operational risk, be it due to changes in sector-specific legislation or to possible litigation on account of exposures to polluting sectors.

6.3 Data quality and availability

Supervisors¹⁹ and financial institutions²⁰ agree that data availability and quality are key challenges when it comes to analysing the financial risks posed by climate change and environmental degradation. Sufficiently granular data covering an adequate time horizon must be available to allow for the correct measurement, control and management of these risks.²¹

The Banco de España expects the institutions under its purview to endeavour to improve the availability and quality of data for the risks posed by climate change and environmental degradation. To this end, taking into account their specific features, they should identify data gaps, begin adapting their systems and interact with customers to make headway in collecting the information required to better identify and assess these risks. Further, based on the information available, they should periodically assess the quality of the data compiled.

7 Disclosure

The disclosure of consistent and comparable information regarding the risks posed by climate change and environmental degradation is essential to allow investors and other stakeholders to make informed decisions. It likewise increases awareness among the institutions themselves as to the importance of these risks at their organisation. There have been several relevant initiatives in this connection over the last few years. Notable among these are the recommendations published in June 2017 by the Task Force on Climate-related Financial Disclosures²² (TCFD) and the European Commission's recently updated guidelines on non-financial reporting (2017/C 215/01).²³ In June 2019, the Commission published a supplement on reporting climate-related information (2019/C 209/01) which included the TCFD's recommendations.

The Banco de España expects institutions to consider in their Pillar III disclosures report those risks posed by climate change and environmental degradation that are considered material, taking into account the particularities associated with these risks (see Section 3) and, specifically, their time horizon. In this connection, the European Commission guidelines on reporting climate-related information (2019/C 209/01) may be considered a valid reference for institutions, on the basis of the materiality of the risks for the institutions and their particular characteristics. Where an institution determines these risks to be immaterial, it should provide a clear and reasoned explanation why this is the case, using quantitative and qualitative data insofar as possible.

¹⁹ See NGFS (2019), *A call for action. Climate change as a source of financial risk. First comprehensive report*, recommendation no. 3

²⁰ See IIF and EBF (2020), *Global industry survey 2020*.

²¹ Certain databases may help to better understand the impact of these risks. For example, the European Commission's Joint Research Centre has a Risk Data Hub, still under development, which could serve to supplement the data compiled by the institutions in the future.

²² See TCFD (2017), *Recommendations of the Task Force on Climate-related Financial Disclosures*.

²³ See European Commission (2017), *Guidelines on non-financial reporting*.