



# ESRB advice on the prudential treatment of environmental and social risks

The European Banking Authority (EBA) has a mandate to assess, after consulting the ESRB, “*whether a dedicated prudential treatment of exposures related to assets, including securitisations, or activities associated substantially with environmental and/or social objectives would be justified*”.<sup>1</sup> The present advice contributes to the assessment required from the EBA by looking at the issue from a systemic risk perspective as opposed to a microprudential risk management perspective. It highlights the specificity of risks related to climate change, which can be expected to become an important driver of broader environmental and social risks, and the challenges of tackling such risks in the existing prudential framework. The advice builds on established positions of the ESRB, as outlined in particular in its contribution to the European Commission’s call for advice on the 2022 Review of the EU Macroprudential Framework<sup>2</sup>. In addition, the ongoing work and input of the ECB/ESRB Project Team on climate risk monitoring<sup>3</sup> was taken into account when preparing this advice.

## Emerging risks requiring a forward-looking approach

**The growing evidence of the disruptive impacts of climate change points to the heightened uncertainty and riskiness of the environment in which the financial system operates and to which it has to adapt.** We are already seeing an increasing number of severe weather events, with impacts that are no longer confined to relatively small geographical areas and that will become increasingly disruptive for society and the economy: droughts causing crop failures or disrupting transport (shipping on inland waterways) and energy production (reduced hydropower capacity and cooling of powerplants), large wildfires, and severe floods. Such supply-side shocks will be particularly difficult to handle as fiscal and monetary policies are likely to become more constrained; fiscal policies as a result of the high budgetary costs of climate change (due to higher spending needs and lower revenues, as economic activity is reduced), and monetary policy as a result of inflationary pressures. More gradual – but chronic – environmental changes are also occurring, making vast areas of the planet unsuitable for agricultural or other forms of production (including tourism) or even uninhabitable. These gradual changes can increase instability through social and political crises within countries, but also through

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<sup>1</sup> Article 501c of Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1, Capital Requirements Regulation), and Article 34 of Regulation (EU) 2019/2033 of the European Parliament and of the Council of 27 November 2019 on the prudential requirements of investment firms and amending Regulations (EU) No 1093/2010, (EU) No 575/2013, (EU) No 600/2014 and (EU) No 806/2014 (OJ L 314, 5.12.2019, p. 1).

<sup>2</sup> [Review of the EU Macroprudential Framework for the Banking Sector](#), ESRB, March 2022.

<sup>3</sup> The Project Team is a joint endeavour of the ESRB’s Advisory Technical Committee and the ECB’s Financial Stability Committee.

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geopolitical conflicts and migratory pressures, requiring the implementation of prompt and substantial actions that will also affect the provision of financial services. The policies aimed at tackling climate change and its consequences add to the overall uncertainty that financial systems face, as such policies may not be implemented in a predictable and progressive way, not least as a result of political backlash. All this is already happening now, but the dynamics could become far worse as certain expected or unexpected tipping points are reached.

**In this context, the conventional risk management methods used by financial institutions and supervisors have clear shortcomings and may not be suitable for properly capturing the full range of climate-related financial risks, as these methods are based on historical data that do not reflect the new risk patterns that will emerge as a result of climate change.** Even the modelling and quantification of climate risks that can be expected, as well as stress testing performed on this basis, still suffer from widespread limitations in terms of the availability of reliable and comparable information related to climate metrics. While efforts are being made by regulators and supervisors to take climate risks into account, we do not know how severe the impact of economic and financial shocks related to climate change will be, when they might materialise, and whether financial institutions will have time to build sufficient resilience. In any case, it is unlikely that we can wait until we have sufficient empirical evidence to recalibrate risk management models used by financial institutions, general capital requirements or more specific macroprudential tools. The radical uncertainty generated by climate change calls for the development of a forward-looking precautionary approach.

**Prudential policies following such a precautionary approach should not be seen as a policy instrument to bring about the transition to a low-carbon economy and the necessary adaptations to climate change, which could entail reputational risks for banks and the authorities overseeing them.** Prudential policies should continue to ensure that the financial system is sufficiently resilient to support the economy as it is hit by severe shocks, including climate-related shocks. By doing so, prudential policies ensure that the financial system is able to fulfil its role of financing the real economy and the transition to climate neutrality.

**In view of the rapidly evolving nature of physical risks (e.g. floods, wildfires, droughts) and transition risks (e.g. energy efficiency of homes and dependence on fossil fuels) linked to climate change, the ESRB welcomes the fact that the EBA is assessing the prudential treatment of environmental and social risks well before the date stipulated in the regulations.** As more evidence becomes available on how climate change affects the value of financial assets through sudden natural disasters or gradual environmental changes, as well as through policy changes, micro- and macroprudential authorities must stand ready to ensure that exposures and resilience are commensurate with those new and emerging risks. Assessing the suitability of the prudential framework in light of emerging environmental and social risks will have to be a continuous process. The response to the question of whether a dedicated prudential treatment for environmental and social risks is needed, and how best to deal with these risks in the existing framework, may evolve over time. The immediate priority must be to consider how the existing micro- and macroprudential tools can be used under conditions of extreme uncertainty (while continuing efforts to reduce uncertainty through data collection and modelling), and to explore how this can be done consistently and transparently, both in the European Economic Area (EEA) and

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globally through the Basel Committee on Banking Supervision. It is thus important to coordinate efforts in addressing systemic climate risks at the EU and global levels.

**While some forward-looking elements can and should be used for the calibration of microprudential requirements<sup>4</sup>, macroprudential tools may also be needed to deal with the heightened overall uncertainty caused by climate change and the associated system-wide environmental, social and political risks that are to be expected.** However, the ESRB would like to emphasise that the assessment of how the macroprudential toolkit could address climate-related systemic risks is still in its early stages, and challenges associated with data and methodological gaps pose a significant obstacle to the calibration of both micro- and macroprudential measures. Therefore, the ESRB sees the assessment required from the EBA under Article 501c of the Capital Requirements Regulation also as an opportunity to inform the European Parliament, the European Council and the European Commission about the ongoing discussions. Considerations on the potential use of both micro- and macroprudential tools to address climate-related systemic risks can evolve rapidly as progress on data and methodologies is being made.

**Addressing environmental risks in the macroprudential framework**

**The ESRB, along with other institutions like the ECB, the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) and the Financial Stability Board (FSB), has emphasised that climate-related risks can have a significant systemic dimension.** First, transition and physical risks can affect not only individual financial institutions, but also a significant share of them at the same time across sectors and/or countries, thereby threatening the stability of the financial system as a whole.<sup>5</sup> Climate-related risks may become systemic due to their intrinsic characteristics, such as their irreversibility, the correlation between natural hazards (for instance, wildfires and heatwaves), the amplification between transition and physical risks (delayed action increasing both transition and physical risks) or their concentration in specific sectors or regions.<sup>6</sup> Moreover, climate-related risks can also be amplified by classic systemic risk channels, including through contagion and spillovers across banks, investment firms and other parts of the financial system, thereby propagating shocks well beyond the entities that are directly exposed to these risks. In addition, transition and physical risks may be heightened by feedback loops between the real economy and the financial system. Finally, uncertainty over the scale and timing of the materialisation of risks related to climate change, and the reliance on historical and imperfect data, may lead to an underestimation of the impact of climate-related risk on the financial system, while the financial sector may continue to produce negative externalities by investing in activities that are harmful to the climate rather than supporting the transition towards carbon neutrality. The systemic nature of

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<sup>4</sup> See the Basel Committee's [Frequently asked questions on climate-related financial risks](#).

<sup>5</sup> See [A call for action, Climate change as a source of financial risk – First comprehensive report](#), Network for Greening the Financial System, April 2019; [Positively green: Measuring climate change risks to financial stability](#), ECB/ESRB Project Team on climate risk monitoring, June 2020; and [Supervisory and Regulatory Approaches to Climate-related Risks, Final report](#), Financial Stability Board, 13 October 2022.

<sup>6</sup> [Climate-related risk and financial stability](#), ECB/ESRB Project Team on climate risk monitoring, July 2021.

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climate risks is now widely acknowledged, and numerous initiatives – in particular, stress testing – are being developed to better monitor and quantify their potential impacts on the financial system.

**The ESRB considers that macroprudential policies have a role to play in addressing the systemic dimension of climate-related risks and in complementing microprudential policies targeting climate-related risks.** Microprudential policies aim at ensuring the resilience of individual banks and investment firms against climate-related risks. To the extent that they rely on empirical data on the materialisation of climate risks, they may lag behind the actual level of such risks and, therefore, not achieve the required level of resilience or a timely reduction of exposures to climate risks. Microprudential policies relying on the accumulation of empirical data may be sufficiently effective if the economic and financial impacts develop gradually and over a long time period. However, non-linearities and tipping points associated with climate change, as well as the uncertainty, complexity and largely irreversible nature of climate risks and their multiple interactions with other environmental, social and political risks, reinforce the case for the use of macroprudential tools calibrated on the basis of plausible scenarios as opposed to empirical observations on the materialisation of climate-related risks.

**The ESRB acknowledges that the deployment of macroprudential measures to address environmental risks will require strong coordination between micro- and macroprudential authorities.** The activation and calibration of macroprudential tools should take into account whether and to what extent the systemic dimensions of climate-related risks are already addressed through the microprudential framework, including through possible Pillar 1 clarifications and Pillar 2 measures in the Supervisory Review and Evaluation Process (SREP). A close dialogue between micro- and macroprudential authorities will help to ensure the most effective and coherent choice of policies.

**The ESRB is of the view that the macroprudential framework can already be used in its current form to address climate risks, notably through systemic risk buffers (SyRBs)<sup>7</sup> and borrower-based measures (BBMs), although some targeted adjustments are needed.** In particular, the general SyRB, which does not distinguish between sectors, is available to be used as a general tool to build resilience against the systemic impacts of climate risk. At the EU level, the framework for the use of sectoral SyRBs could be adapted to facilitate targeting systemic climate risks while ensuring a harmonised EU approach.

**The ESRB would welcome a review by the EBA, in the near term, of its guidelines on the appropriate subsets of sectoral exposures to which an SyRB may be applied.** In particular, the EBA guidelines currently do not allow for the consideration of intrasectoral heterogeneity in defining activities that are more exposed to climate risk. These are defined based on the sector of the counterparty, without taking into account factors such as a counterparty's current and future emissions levels and the credibility of its transition plans or potential exceptions, which will be fundamental for the calibration of the tool. The current approach could entail the risk that

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<sup>7</sup> Article 133 of Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (OJ L 176, 27.6.2013, p. 338, Capital Requirements Directive).

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a sectoral SyRB discourages lending to companies engaged in decarbonisation processes, which could be counterproductive for implementing an orderly transition. The reference framework that is being developed by the ECB/ESRB Project Team on climate risk monitoring should be taken into account in such a review.

**Regarding BBMs, their adjustment is possible at the national level, and some countries have already started implementing or considering such adjustments.** The ESRB considers it necessary to look at the role of BBMs also in the context of the ongoing review of the EU macroprudential framework for the banking sector.

**Systemic risk buffer**

**The SyRB has already been identified as a possible macroprudential tool to guard against systemic aspects of climate risks in the EU.** The SyRB aims to address systemic risks that might not be entirely covered by the microprudential provisions of the Capital Requirements Regulation or by the countercyclical capital buffer (CCyB) or the buffers for globally systemic important institutions (G-SIIs) and other systemically important institutions (O-SIIs).<sup>8</sup> The ESRB considers that, as the SyRB provides a flexible way to address unexpected shocks, it is the most suitable tool available to deal with the risk of severe exogenous shocks linked to climate change and to bolster resilience. Along these lines, the European Commission's proposal to amend the Capital Requirements Directive under the 2021 banking package<sup>9</sup> includes a clarification that the SyRB could also be used to address macroprudential or systemic risks stemming from climate change. A general SyRB could be activated based on a measure of climate-related concentration risks and thus apply only to banks most exposed to climate risks, by providing incentives to diversify exposures and limit concentration. The ESRB acknowledges the need for a common methodology to calibrate such buffers and ensure a harmonised approach across the EU.

**A sectoral SyRB may be an adequate tool to increase resilience to concentrated exposures to those sectors or geographies that are most vulnerable to climate risks, provided that it can be designed with sufficient granularity.** It could increase resilience against the materialisation of climate risks proportionately to banks' exposures to such risks, while **also providing incentives to diversify and limit concentration.** Along these lines, an **ECB/ESRB Project Team report (2022)** noted that the SyRB, particularly in its sectoral application, could be used to contain the build-up of risk concentration, and at the same time enhance the resilience of banks against the materialisation of climate risks, as also reiterated by the **FSB (2022)**. However, it would be desirable that the design of a sectoral SyRB can differentiate between borrowers with different exposures to climate risks, both physical and transition-related, and that it can take into account different transition plans of borrowers to avoid any unintended consequences of the SyRB for transition and adaptation

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<sup>8</sup> ESRB, Review of the EU Macroprudential Framework for the Banking Sector, op. cit.

<sup>9</sup> Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2013/36/EU as regards supervisory powers, sanctions, third-country branches, and environmental, social and governance risks, and amending Directive 2014/59/EU.

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financing. The ESRB stands ready to support the revision of the EBA guidelines on the appropriate subsets of exposures to which the competent authority or the designated authority may apply a systemic risk buffer.<sup>10</sup>

**The ESRB and the ECB are jointly working on possible applications of the SyRB framework to limit systemic climate-related financial risks: a general SyRB, a general SyRB activated based on concentration risk indicators and a sectoral SyRB.** The main opportunities and challenges of each of these applications are being assessed by the ESRB and the ECB. A final report is envisaged for the end of 2023.

**Borrower-based measures**

**BBMs could usefully complement capital-based measures to mitigate particular climate-related financial risks.** BBMs have generally been designed to prevent excessive indebtedness as well as risks and imbalances related to real estate markets stemming from new lending. Both physical and transition risks could negatively impact borrowers' debt servicing capacity and loan collateral values. BBMs could help to mitigate such vulnerabilities. However, they are not typically designed to be sensitive to climate-related financial risks, and calibration methods do not account for climate risks, although it can be expected that property values will increasingly reflect climate risks, thereby making BBMs sensitive to climate change. By incorporating climate risk factors more directly into the calibration of BBMs – especially if climate risks have been assessed as systemically relevant in a given country – national authorities could more effectively assess and manage overall risks to borrower solvency and collateral value. Potential options include reflecting climate-related financial risks in the evaluation of borrower solvency and in the assessment and evolution of collateral value (especially if valuations are not sufficiently forward-looking with regard to climate risks and possible policy changes), allowing for adjustments or differentiation in lending standards and conditions.

**The implementation of climate risk-related BBMs will be facilitated by ongoing efforts to bridge existing data gaps.** Reflecting climate-related financial vulnerabilities in the design or calibration of BBMs requires better evidence based on the vulnerability of borrowers and their collateral to both physical and transition risks. This entails the collection and processing of data, which may fall outside the usual monitoring activities of both regulators and lenders, as well as new analytical capabilities. Data gaps remain a challenge, especially with regard to the energy efficiency characteristics of properties and linking existing credit data with climate exposure data, but ongoing regulatory initiatives, such as the review of the EU's Energy Performance of Buildings Directive<sup>11</sup>, are expected to improve the availability and accessibility of information on real estate energy efficiency. As the possibilities for incorporating climate risks into BBM frameworks hinge on data availability,

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<sup>10</sup> Issued in accordance with Article 133(6) of Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions, in conjunction with Article 16(1) of Regulation (EU) No 1093/2010 of the European Parliament and of the Council of 24 November 2010 establishing a European Supervisory Authority (European Banking Authority), amending Decision No 716/2009/EC and repealing Commission Decision 2009/78/EC (OJ L 331, 15.12.2010, p. 12).

<sup>11</sup> Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (recast) (OJ L 153, 18.6.2010, p. 13-35).

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addressing these data gaps would be a natural first step towards designing BBMs to account for climate risks. The ESRB supports regulatory action in this area to address such gaps.

**Many EEA countries are currently analysing the potential impacts of climate risk in relation to BBMs, but only a few adjustments to BBM frameworks based on climate-related characteristics have been reported so far.** The results of a survey launched by the ECB/ESRB Project Team on climate risk monitoring revealed that many EEA countries are assessing the systemic relevance of climate risks and their potential impacts on borrower solvency, collateral value and related impacts on banks. Only a few adjustments to BBM frameworks or exceptions have been reported so far, typically related to the energy efficiency characteristics of loan collaterals.

**The ESRB is of the opinion that BBMs should already form part of national macroprudential toolkits in the short to medium term and that their design should allow them to be used to mitigate climate-related financial risks.** Moreover, in its **response to the European Commission's call for advice on the review of the EU macroprudential framework for the banking sector (2022)**, the ESRB also advised that a minimum common set of BBMs for residential real estate should be introduced into the EU legal framework, and that the key concepts of BBMs should be defined at the EU level, while leaving in the hands of the national authorities the decisions on the calibration, overall design, activation and release of BBMs. The ESRB points out that the design of BBMs should be flexible enough to allow the incorporation of climate-related financial risks into their calibration and that existing data gaps hindering the incorporation of climate-related risks into BBM frameworks should be closed.

**The need for a scenario analysis approach to calibrate prudential measures**

**In general, the ESRB recognises the importance of further analytical work leveraging enhanced disclosures to refine the measurement of systemic climate risk exposures and to bridge remaining data and information gaps. However, the ESRB also considers that the heightened general uncertainty caused by climate change cannot be precisely monitored or anticipated and thus calls for a precautionary approach.** Indeed, climate change and its impacts are highly dynamic and unpredictable and are likely to worsen; the adverse impacts that are becoming visible now are likely to become significantly more disruptive in subsequent years, as long as global average temperatures keep rising. The way to prepare for this, from a financial stability point of view, is therefore not only to acquire empirical evidence on impacts and then to set policies, but to work also on the basis of scenarios and to apply them to our improved knowledge of vulnerabilities, thanks to better data on vulnerabilities to physical and transition risks, and thanks to a better ability to link these vulnerabilities to debts owed to the financial system.

**Scenario analysis will be key to policy design, and the one-off scenario analysis exercise that has been requested by the European Commission from the European supervisory authorities, the ECB and the ESRB will help to build joint capacity in this respect.** In this context, the ESRB has been tasked with developing plausible scenarios that could already materialise in the near term, most likely in the form of asset price corrections triggered by a sudden reassessment of transition or physical risks. One scenario could combine the materialisation of climate change-related risks with other economic shocks that are already considered in

regular stress-testing exercises. This exercise will be a crucial learning opportunity for micro- and macroprudential authorities and should contribute to a joint capacity for developing an appropriate prudential treatment of rapidly emerging risks.

## Conclusion

**The response to the question of whether a dedicated prudential treatment for environmental and social risks is needed, and how best to deal with these risks in the existing framework, may evolve over time. The immediate priority must be to consider how existing micro- and macroprudential tools can be used, and how this can be done consistently and transparently, both in the EEA and globally through the Basel Committee on Banking Supervision.** While there may not be a need for immediate major changes to the prudential framework, it is important to strengthen the forward-looking approach to risks, both in the use of the existing framework and in possible new regulatory steps. This will have to occur before we will be entirely satisfied with our ongoing and important endeavours to improve our evidence base and capacity to model financial stability risks related to climate change.

**The challenge will therefore be to develop a precautionary approach on the basis of risk materialisation scenarios and the growing evidence on exposures to climate risks.** Climate change will affect the financial system – and not just the banking sector<sup>12</sup> – through multiple channels in as yet unpredictable ways. In fact, the main threat to financial stability will arise from the unforeseen shocks that climate change will bring. While it will not be possible to put probabilities on particular courses of events, authorities will need to turn “unknown unknowns” into “known unknowns” and develop a better understanding of the threats for which financial systems need to be prepared.

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<sup>12</sup> The objective of tackling climate change-related risks will be difficult to achieve solely through measures applied to the banking system, as affected counterparties could turn to other financial intermediaries that are not subject to equivalent prudential measures. Ensuring prudential consistency and uniformity across the entire financial sector would support the voluntary adoption of decarbonisation plans announced by major global financial institutions that have joined the Glasgow Financial Alliance for Net Zero (GFANZ).