Federal Housing Finance Agency

ADVISORY BULLETIN
AB 2024-01: Climate-Related Risk Management

Purpose

This advisory bulletin (AB) provides Federal Housing Finance Agency (FHFA) guidance to Fannie Mae, Freddie Mac, and Common Securitization Solutions (collectively, the Enterprises)[1] on managing climate-related risks to support a safe and sound operating environment.

Background

Climate change presents risks to the safety and soundness of the Enterprises and their ability to provide liquidity, stability, and affordability to the housing market. The Enterprises' financial condition, operations, and counterparties can be adversely affected by both the physical risks and transition risks associated with climate change (collectively referred to as climate-related risks). Climate-related risks can directly and indirectly impact the Enterprises' exposure to a range of risks such as financial, operational, legal, and reputational risk.

In the context of climate change, physical risk refers to the harm to people and property arising from the frequency, severity, and volatility of acute weather events such as wildfires, hurricanes, and floods, as well as from longer-term chronic shifts in climate such as changes in precipitation patterns, sea-level rise, and temperature fluctuations. These physical risks can result in increased collateral asset damage, mortgage delinquency rates, and foreclosures that create financial stress for the Enterprises and the mortgage finance system. Additionally, physical risks can disrupt the Enterprises' operations and their ability to carry out their mission.

[1] Common Securitization Solutions, LLC (CSS) is an "affiliate" of both Fannie Mae and Freddie Mac, as defined in the Federal Housing Enterprises Financial Safety and Soundness Act of 1992, as amended. 12 USC 4502(1).

Transition risk refers to the risks involved with shifting to a lower-carbon economy driven by new policies and regulation, technological advancement, and changes in investor and consumer sentiment. For example, new greenhouse gas emission laws and policies could affect the valuation of assets and the Enterprises' credit portfolios and balance sheets, as well as increase operational costs to the Enterprises themselves.

The Enterprises should consider the range of climate-related risks that could affect them in the near and long term. The Enterprises should address the possibility of extreme weather events affecting their business and operational resiliency, as well as of rising sea levels and changing temperatures over decades degrading or destroying properties secured in their portfolios. Although it is difficult to predict how and when climate-related risks will manifest in the future, the Enterprises should be prepared to respond to these dynamic risks in order to operate in a safe and sound manner that supports their respective missions.

FHFA's Prudential Management and Operations Standards, Appendix to 12 CFR Part 1236, set forth ten enumerated standards, adopted as guidelines, addressing general responsibilities of the board and senior management, as well as specific responsibilities for management and operations. Standard 1 (Internal Controls and Information Systems) and Standard 8 (Overall Risk Management Processes) highlight the need for the Enterprises to establish, as appropriate, risk management practices that identify, assess, control, monitor, and report risk exposures, and the need to have appropriate risk management policies, standards, procedures, controls, and reporting systems in place. These specific standards also apply to managing climate-related risks.

Guidance

Each Enterprise should establish and integrate an appropriate climate-related risk management framework into its existing enterprise risk management (ERM) program and three lines structure.[2] At a minimum, the framework should include the following components:

I. Governance
II. Risk Identification and Assessment, Controls, and Risk Monitoring Processes
III. Metrics and Data
IV. Scenario Analysis
V. Risk Reporting and Communication Processes

The Enterprise should take a risk-based approach when developing its climate-related risk management framework, which should be commensurate with its size, complexity, business

[2] *See* FHFA Advisory Bulletin 2020-06, *Enterprise Risk Management Program,* (Dec. 11, 2020).

activity, and risk profile. The Enterprise should also consider the evolving nature of climate-related risks when structuring and evaluating its climate-related risk management framework. As such, a more iterative approach to climate-related risk management may be appropriate to allow the Enterprise to incorporate developing climate-related risk management practices, methodologies, and climate-related datasets.

I. Governance

The Enterprise should integrate, as appropriate, climate-related risks into its existing governance framework. As the Enterprise matures its climate-related risk management activities, it may consider standalone climate-related risk governance approaches such as implementing a designated climate-related risk appetite, taxonomy, and policies, standards, and procedures. The Enterprise's approach when developing the governance of its climate-related risk management framework should be proportionate to its size, complexity, and business activity, and include the following:

A. Strategy and Business Objectives

The Enterprise should incorporate climate-related risks when determining its overall strategy and business objectives.[3] The Enterprise should document within its strategic plan how it intends to address climate-related risks across short-, medium-, and long-term time horizons while achieving its public purposes and mission in a safe and sound manner. The results of climate-related scenario analyses should be considered when developing climate-related strategies. The Enterprise's climate-related strategies and business commitments should align with its overall risk appetite. Further, the Enterprise's strategic and business objectives should be resilient enough to accommodate the dynamic nature of climate-related risks.

B. Risk Appetite

The Enterprise should integrate climate-related risks into its risk appetite framework and risk appetite statements. The climate-related risk appetite should be defined in line with existing enterprise-wide risk frameworks and capture material climate-related risks to which the Enterprise is exposed. The Enterprise should clearly delineate material climate-related risks, risk thresholds, and escalation processes when thresholds are breached. Given the evolving nature of climate-related risks, the Enterprise should also regularly assess the climate-related risk appetite by evaluating appropriate climate-related risk metrics. As climate-related risk management practices and methodologies mature, the Enterprise can evaluate whether transitioning to a standalone risk appetite statement for climate-related risks would be appropriate.

[3] 12 CFR 1239.14(a)(5).

C. Risk Taxonomy

A comprehensive risk taxonomy can facilitate the Enterprise's identification of climate-related risks and development of an appropriate climate-related risk strategy to manage and mitigate such risks. Since climate-related risk can amplify existing risks, the Enterprise should include climate-related risk in its risk taxonomy as a cross-cutting risk that captures how risk categories are affected by potential physical and transition risks associated with climate change. The Enterprise can evaluate whether climate-related risk should remain a cross-cutting risk or whether a standalone climate-related risk category should be created. The Enterprise should review and assess the taxonomy regularly to incorporate evolving and emerging climate-related risks.

D. Roles and Responsibilities

The Enterprise's climate-related risk management framework should be implemented through clearly defined roles and responsibilities at the board of directors or board committee (board), senior management, and management levels. This includes a designated position at the senior management level that is responsible for implementing and maintaining appropriate climate-related risk management practices. Given the impact of climate change on multiple existing risks, the Enterprise should also incorporate cross-functional roles that can identify the potential ways climate change can affect the Enterprise's business and operations across divisions and business lines. In addition, as the Enterprise matures its climate-related risk management framework, the Enterprise should consider ways to enhance oversight from the board and senior management. For example, forming a dedicated management-level committee that is aligned specifically to climate-related risks and business-line activities could help facilitate enterprise-wide pathways to escalate and communicate climate-related risk matters to the board and senior management more effectively.

The board is responsible for risk oversight and directing the conduct of the Enterprise to further safe and sound operations.[4] This should include overseeing climate-related risks and cultivating a risk culture that incorporates climate-related risk management practices into the Enterprise's business and operations. The board ensures that the Enterprise risk appetite and business strategies—which should include those that are climate-related—are aligned with the overall Enterprise risk appetite and strategic plan. Additionally, the board is responsible for approving the Enterprise's risk appetite, risk exposure, and risk-taking activities, which should include those that are related to climate risk.

[4] 12 CFR 1239.4.

The board should hold senior management accountable for implementing the climate-related risk management framework in line with the risk appetite and providing the board with sufficient information to maintain effective oversight. The board should be aware of material climate-related risks and applicable climate-related laws and regulations in a timely manner to make informed decisions. Further, the board should provide effective challenge to senior management when overseeing management's recommendations and reporting of climate-related risks.

As part of its responsibility to implement the climate-related risk management framework and climate-related strategies, senior management should hold each of the three lines accountable for their designated roles.[5] Senior management should sufficiently inform the board of material climate-related risks and exposures across various time horizons to facilitate effective board oversight. Senior management should also allocate adequate resources to manage climate-related risks across the enterprise, including climate-related risk training appropriate for designated roles and responsibilities. Senior management should ensure that the Enterprise complies with any climate-related laws and regulations. Further, senior management should confirm that public statements regarding the Enterprise's climate-related activities align with internal strategies and the climate-related risk management framework.

To effectively carry out climate-related risk governance, the board, senior management, and management should maintain appropriate awareness of:

- Material climate-related risk exposures to the Enterprise across various time horizons;
- Applicable climate-related laws and regulations and emerging legal and regulatory obligations regarding climate-related risks that may affect the Enterprise;
- Assumptions, limitations, and uncertainty around climate-related risks that affect the establishment of related risk frameworks;
- Pertinent climate-related risk management activities such as climate scenario analysis results that inform decision-making; and
- Key and relevant climate-related risk metrics.

E. Policies, Standards, and Procedures

The Enterprise's climate-related risk management approach should be incorporated into existing ERM policies, standards, and procedures, or if appropriate, outlined in a standalone climate-related risk policy. Policies, standards, and procedures should clearly define the roles and responsibilities, strategies, risk appetite, controls, processes, and metrics necessary to manage

[5] *See* FHFA Advisory Bulletin 2020-06, *Enterprise Risk Management Program* (Dec. 11, 2020).

climate-related risk. The owners of these policies, standards, and procedures should maintain awareness of evolving climate-related risk management practices and changes to the Enterprise's operating environment and update relevant documents in a timely manner, as needed.

II. Risk Identification and Assessment, Controls, and Risk Monitoring

The Enterprise should develop and implement processes to identify, assess, control, and monitor climate-related risks that operate within the Enterprise's ERM program while achieving its public purposes and mission in a safe and sound manner. The approach should be appropriate for the Enterprise's size, complexity, business activity, and risk profile. For each phase, the Enterprise should establish clear roles and responsibilities and lines of authority across the three lines. Additionally, the Enterprise should ensure input from a broad representation of relevant subject matter experts that address the cross-cutting nature of climate-related risks. The Enterprise should consider short-, medium-, and long-term time horizons for each phase and leverage relevant climate-related data and metrics, as appropriate. The processes and procedures for each phase should also be sufficiently documented. Any identified climate-related risks should be included in the Enterprise's risk inventory to create an iterative risk identification process.

A. Risk Identification and Assessment

The Enterprise should identify how climate-related risks can impact its business and operations across various time horizons. As part of this process, the Enterprise should identify how physical and transition risks could affect existing risks, including any associated interdependencies, correlations, and concentrations that may arise across its business, portfolios, and counterparties. Examples of risk exposure across existing risk categories include, but are not limited to, the following:

- <u>Credit Risk</u> – Climate-related risk may affect the Enterprise's credit risk through increased housing costs, lower collateral valuation or loss of collateral due to increased risk of sudden natural disasters or longer-term climate change patterns. Credit risk may increase with loss of insurance as availability or affordability declines in high-risk geographic areas. Climate-related credit risk concentrations can also manifest from physical or transition risks.
- <u>Liquidity Risk</u> – Climate-related financial risk drivers could affect the Enterprise's cash inflows and outflows and ability to manage a liquidity position within safety and soundness limits.
- <u>Market Risk</u> – Physical and transition risks can lead to sudden shifts in market expectations, supply and demand, and losses for the Enterprise due to climate-related pricing shocks and volatility.

- Operational Risk – Severe weather events or chronic climate changes can cause costly business disruptions to the Enterprise, its third-party providers, and counterparties. Transition risks can also affect the Enterprise's control environment through legal and regulatory changes.
- Legal and Compliance Risk – Climate-related laws and regulations at the federal and state level present legal and compliance risk for the Enterprise. In addition to climate-related disclosure requirements, other areas of potential increased risk include fair lending, fair housing, and unfair or deceptive acts or practices concerns.
- Strategic Risk – Climate-related risks affecting financial condition and operational resiliency may impact the Enterprise's ability to achieve its strategic goals.

The Enterprise should assess and evaluate the impacts of identified climate-related risks to determine their relative significance in relation to other existing risks and their associated effects on its mission, strategy, and safety and soundness. The Enterprise should use appropriate measurement tools and methods to effectively conduct its risk assessment. The Enterprise should incorporate tools that help staff question the causes of identified risks and expected outcomes. Such tools may include, but are not limited to, heat mapping, climate risk dashboards, and climate scenario analysis. Examples of methods that measure the severity of identified climate-related risks include climate-related risk analysis, exposure mapping, and vulnerability assessments. The Enterprise should document the selected tools, methods, data, parameters, and assumptions used for the risk assessment process. As tools evolve, the Enterprise should incorporate such developments into its climate-related risk assessments, as necessary and appropriate.

B. Controls

The Enterprise should establish and implement plans to mitigate its exposure to material climate-related risks. Climate-related risk mitigation plans should be integrated into the Enterprise's existing internal controls, across the three lines, and aligned with the Enterprise's risk appetite. The Enterprise should review and assess the effectiveness of its mitigation plans regularly, incorporating any changes in the legal and regulatory landscape as well as advancements in climate-related analytics, data, and metrics.

C. Risk Monitoring

The Enterprise should develop processes to monitor climate-related risks to identify changes or trends in risk exposures over time that will allow stakeholders to plan and respond accordingly to mitigate such risks. The Enterprise should ensure that climate-related metrics and data are regularly updated to capture emerging climate-related risks. The Enterprise should also monitor climate-related risks arising from third parties, supply chains, sectors, and geographic locations. As climate-related risks may quickly evolve, the Enterprise should implement mechanisms to identify, aggregate, assess, and report material climate-related information to board and senior management for timely decision-making.

III. Metrics and Data

To effectively monitor and manage climate-related risks, the Enterprise should develop appropriate and relevant climate-related risk metrics or incorporate relevant exposures into existing risk metrics (e.g., risk limits and key indicators) that capture its risk exposure to the extent possible. Examples include, but are not limited to, physical and transition risks and the associated financial and operational impacts to the Enterprise, such as re-pricing of assets and increased operating costs. Climate-related risk metrics should also be developed for the Enterprise's climate-related strategies and risk management activities. These climate-related risk metrics should be clear, reliable, objective, and verifiable, as well as conform to industry standards and regulatory requirements. FHFA recognizes that evolving climate-related data, analytics, and modeling techniques may impact the reliability and verifiability of forward-looking climate-related risk metrics across future time horizons. The Enterprise should regularly review and evaluate its climate-related risk metrics for relevancy and efficacy and document any identified limitations.

The Enterprise should collect and use climate-related data that captures physical risks and transition risks to adequately assess the degree and scope of its climate-related risk exposure. Climate-related data, such as insurance coverage and availability, can also help the Enterprise develop appropriate risk mitigation plans. While climate-related metrics and data may be limited in accuracy and availability, to the extent practicable, the data should be accurate, timely, and consistent. As a practice, the Enterprise should conduct data quality and reliability assessments on climate-related source data and establish processes to periodically evaluate the source data for appropriateness and utility. Any identified limitations should be documented. As climate-related data evolves, the Enterprise should incorporate updated and relevant datasets into its climate-related risk analyses.

The Enterprise should establish controls and processes to identify gaps in key climate-related data used as inputs for risk management, scenario analysis, and modeling. The Enterprise should stay apprised of relevant climate-related data sources and exercise due diligence to obtain data to fill identified gaps. In instances where existing climate-related data gaps cannot be alleviated, the Enterprise should document how the identified data gaps affect established climate-related risk metrics and analysis as well as the methodology and processes used to address the data gaps, where possible.

IV. Scenario Analysis

Climate-related scenario analysis involves identifying and assessing a range of outcomes given a plausible future state that allows the Enterprise to understand how climate-related risks may affect its strategy, business, and operations. The Enterprise can use scenario analysis to assess the resiliency and effectiveness of its climate-related risk management framework under a range of climate-related risk events.

The Enterprise should develop and implement a climate-related scenario analysis framework that is commensurate with its size, complexity, business, and risk profile. If appropriate, the Enterprise's model risk management framework can provide the necessary oversight, validation, and quality control standards for its climate-related scenario analysis framework. The Enterprise can use existing models (e.g., catastrophe models and those provided by third-party vendors) or develop in-house modeling capabilities applicable to its climate-related scenario analyses. The Enterprise should also:

- Clearly define objectives, parameters, and methodologies for climate-related scenarios with the goal of developing and implementing consistent methodologies year-over-year;
- Document key associated assumptions, limitations, and analytical approaches used in the development and implementation of the scenarios;
- Implement a diverse range of plausible climate-related scenarios that are qualitative, quantitative, or both;
- Develop or leverage existing scenarios for physical and transition risks that include low-probability, high-impact events, as well as low-impact, high-probability events, over a range of time horizons and geographical areas; and
- Assess specific risk areas under different scenarios and time horizons (e.g., the adequacy of insurance coverage within the Enterprise's portfolio and counterparty and sector sensitivities) that can provide reference points for how climate-related risks could directly and indirectly affect the secondary mortgage market and lead to downstream effects.

V. Risk Reporting and Communication Processes

The Enterprise should implement processes to adequately report and communicate relevant climate-related risks to appropriate internal stakeholders. The Enterprise should consider enhancing existing reporting and communication processes to facilitate information sharing, cross-functional collaboration, comparability across the enterprise and its operations, and sufficient oversight by board and senior management. Additionally, the Enterprise should implement mechanisms to effectively aggregate and report material and emerging climate-related risk exposures to the board and senior management in a timely manner. The board and other appropriate stakeholders should receive reports that include relevant results of climate-related scenario analyses and any limitations and uncertainties related to these assessments, such as data gaps. The Enterprise should continually adapt its internal risk reporting to meet the expectations of the evolving regulatory and legal landscape affecting climate-related risks. As the Enterprise matures its reporting of climate-related risks, it should evaluate the frequency and scope of its internal reporting protocols to optimally convey climate-related risks that affect its business and operations.

The Enterprise should regularly evaluate and adapt its processes in reporting climate-related risks to external stakeholders, as appropriate. The Enterprise should monitor federal and state requirements for reporting climate-related risks and risk management activities to identify which laws and rules are applicable.[6] An iterative and progressive approach may be appropriate for the Enterprise to incorporate evolving federal and state disclosure laws into their respective climate-related risk frameworks.

Related Guidance

Enterprise Fair Lending and Fair Housing Rating System, Federal Housing Finance Agency Advisory Bulletin AB 2023-05, September 27, 2023.

Supplemental Guidance to Advisory Bulletin 2013-07 – Model Risk Management Guidance, Federal Housing Finance Agency Advisory Bulletin 2022-03, December 21, 2022.

Artificial Intelligence/Machine Learning Risk Management, Federal Housing Finance Agency Advisory Bulletin AB-2022-02, February 10, 2022.

Enterprise Fair Lending and Fair Housing Compliance, Federal Housing Finance Agency Advisory Bulletin 2021-04, December 20, 2021.

Enterprise Risk Management Program, Federal Housing Finance Agency Advisory Bulletin 2020-06, December 11, 2020.

Compliance Risk Management, Federal Housing Finance Agency Advisory Bulletin 2019-05, October 3, 2019.

Business Resiliency Management, Federal Housing Finance Agency Advisory Bulletin 2019-01, May 7, 2019.

[6] *See, e.g.,* 17 CFR 210, 229, 230, 232, 239, and 249.

Oversight of Third-Party Provider Relationships, Federal Housing Finance Agency Advisory Bulletin 2018-08, September 28, 2018.

Oversight of Multifamily Seller/Servicer Relationships, Federal Housing Finance Agency Advisory Bulletin 2018-05, August 14, 2018.

Internal Audit Governance and Function, Federal Housing Finance Agency Advisory Bulletin 2016-05, October 7, 2016.

Data Management and Usage, Federal Housing Finance Agency Advisory Bulletin 2016-04, September 29, 2016.

Oversight of Single-Family Seller/Servicer Relationships, Federal Housing Finance Agency Advisory Bulletin 2014-07, December 1, 2014.

Operational Risk Management, Federal Housing Finance Agency Advisory Bulletin 2014-02, February 18, 2014.

Model Risk Management Guidance, Federal Housing Finance Agency Advisory Bulletin 2013-07, November 20, 2013.

12 CFR Part 1239 Responsibilities of Boards of Directors, Corporate Practices, and Corporate Governance (Corporate Governance Rule).

12 CFR Part 1236, Appendix, Prudential Management and Operations Standards.

FHFA has statutory responsibility to ensure the safe and sound operations of the regulated entities and the Office of Finance. Advisory bulletins describe FHFA supervisory expectations for safe and sound operations in particular areas and are used in FHFA examinations of the regulated entities and the Office of Finance. Questions about this advisory bulletin should be directed to: SupervisionPolicy@fhfa.gov.