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## **The European Central Bank Integrates the Climate Factor into Its Collateral Framework**

*A new approach to managing climate risks in monetary policy*

The growing climate-related threats to economic systems have reshaped the risk management approaches of financial institutions. On July 29, 2025, the European Central Bank (ECB) announced the introduction of the “Climate Factor,” integrating climate risks into asset valuations and accelerating structural transformation in monetary policy. The Climate Factor is expected to increase the borrowing costs of carbon-intensive sectors and redirect capital toward more sustainable areas in the medium and long term. This regulation represents a new framework that goes beyond traditional central banking by guiding capital flows while taking environmental risks into account. This study discusses how the Climate Factor is integrated into central banks’ risk management frameworks, its effects, and the adaptation and opportunities it may bring for Turkey.

## Background

The intensifying negative impacts of climate change, in line with frameworks such as the Paris Climate Agreement and the EU Green Deal, have accelerated the transformation of the global economy. The ECB has been one of the pioneering institutions adapting to these developments. However, despite progress, it has been repeatedly emphasized that the financial system has not fully internalized long-term risks. In his 2015 speech in London, Bank of England Governor Mark Carney highlighted the long-term threats of climate change and described the issue as the “tragedy of the horizon” (Carney, 2015). Carney argued that because the financial world focuses on the short term, it neglects long-term climate threats and fails to take necessary measures.

These risks are defined under three main categories:

- **Physical risks:** threats arising from the direct environmental impacts of climate change, such as extreme weather events, heatwaves, or rising sea levels.
- **Transition risks:** uncertainties resulting from the costs of transitioning to a low-carbon economy, regulatory changes, or technological transformations.
- **Liability risks:** potential legal sanctions, financial losses, and reputational damage in cases of failure to meet climate-related obligations.

This perspective initiated international debates on the integration of climate risks into macroeconomic analysis and monetary policy frameworks. The ECB and the European Systemic Risk Board's *Positively Green* report (2020) recommended stress tests and scenario analyses to assess climate uncertainties. These methods demonstrated the importance of integrating climate risks into collateral valuations both for environmental sustainability and for preserving financial stability.

In 2021, ECB President Christine Lagarde emphasized that while central banks do not directly set carbon prices, they can significantly support the climate transition through transparency, the redirection of capital flows, and regulatory tools. Similarly, in her speech *From Green Neglect to Green Dominance* (2021), ECB Executive Board Member Isabel Schnabel stressed that the principle of market neutrality indirectly privileges high-emission sectors, deepens structural problems, and makes the ECB's assessment of climate risks a corporate obligation.

Accordingly, in its 2024 financial report on climate-related issues, the ECB clearly outlined three main objectives:

- managing climate-related financial risks,
- supporting the transition to a low-carbon economy,
- accelerating transformation in markets through transparency and cooperation.

The Climate Factor is a concrete example of these strategic objectives translated into policy and represents an important step to support the transition process. In this way, it is expected that climate risks will be more explicitly reflected in collateral valuations in the future. By gradually integrating climate scenarios into its risk management framework, the ECB has reinforced its strategy of strengthening the monetary transmission mechanism.

### The ECB's strategic objectives on climate change

| Managing climate-related risks                                                                                                                                                                                                                                                         | Supporting the green transition                                                                                                                                                                                        | Fostering wider action                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                      |                                                                                                                                      |                                                                                                                                                                                                |
| We work to better understand, monitor and manage climate-related risks in monetary policy and investment operations, and in the financial system. We also assess the economic impact of climate-related policies and explore the relationship between climate, nature and the economy. | We support an orderly transition to a carbon-neutral economy using measures within our mandate. This includes promoting the development of sustainable finance and creating incentives for a greener financial system. | We help improve general understanding of climate and nature-related risks and work closely with European and international partners on climate and sustainable finance topics. We also work to improve the transparency of our activities and reduce our own environmental impact. |

Source: ECB.

## Key Principles and Implementation Process

### 1. What is the purpose of the Climate Factor?

The Climate Factor is a new regulatory instrument developed to calculate potential losses in the value of assets included in the Eurosystem's collateral framework due to climate risks. By applying an additional climate risk discount to collateral, this policy aims to protect the ECB's balance sheet and monetary policy from climate-related transition shocks while ensuring the sustainability of financial stability. Pricing based on accurate information will help reduce systematic problems stemming from existing data gaps. Schnabel argued that carbon pricing alone is not sufficient to finance the transition, and that deep and liquid capital markets are essential for healthy risk premia to form. In this sense, the Climate Factor can be considered the first central bank-level initiative designed to address this gap.

Stress tests conducted in Japan revealed that banks reported relatively low credit losses from climate risks. However, the results were influenced by the limitations of the data and scenarios used. In particular, the mismatch between borrowers' transition plans and macro-level scenarios caused losses to appear lower than they actually were. This shows that the reliability of tools such as the Climate Factor depends on the availability of detailed micro-level data and consistency in scenario building.

## 2. Which assets are covered by the Climate Factor?

The Climate Factor evaluates, on an asset-by-asset basis, each security issued by non-financial corporations outside the public sector. In other words, instead of relying on portfolio or sectoral averages, the assessment is conducted individually for each bond or similar security. This evaluation considers the potential value loss of a security in the face of climate-related uncertainties. According to the ECB, while corporate bonds issued by the non-public sector are included in this scope, asset-backed securities (ABS) and covered bonds are excluded (ECB, 2025).

## 3. How does the Climate Factor work?

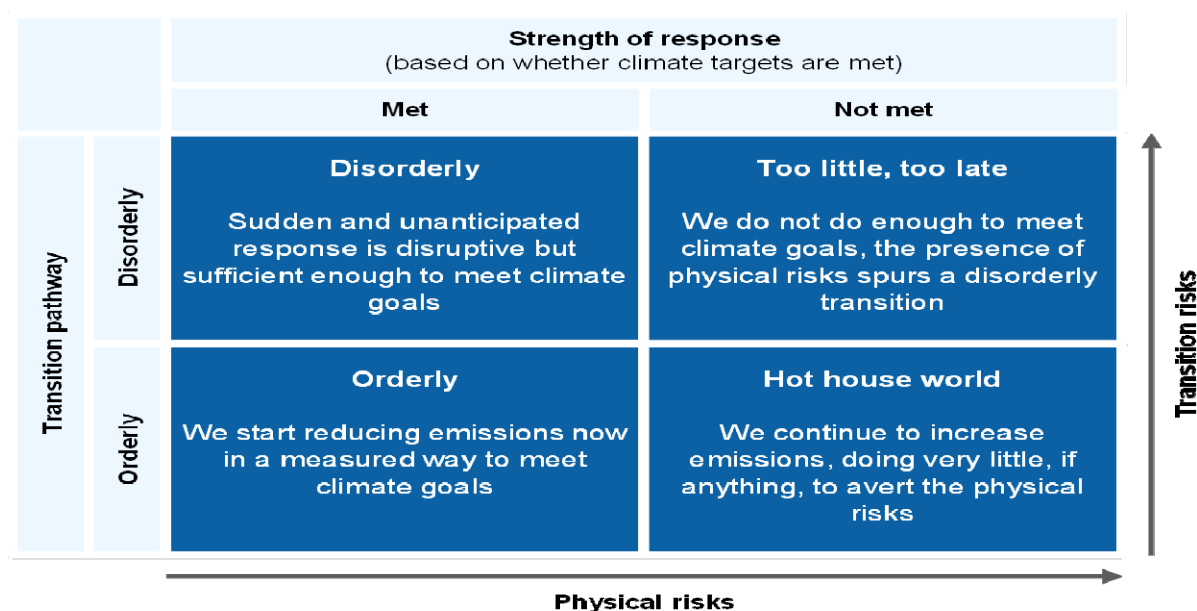
The Climate Factor relies on a three-dimensional uncertainty score to measure each security's sensitivity to climate risks. This score aims to more realistically reflect the potential future loss of value of the asset. The determination process is carried out through three main components:

1. **Sectoral level:** based on the results of the 2024 Eurosystem climate stress tests, identifying which sectors are more vulnerable to physical and transition risks.
2. **Issuer level:** considering the carbon footprint, transition plans, and reporting quality of the issuing companies. The ECB's climate score defined under the Corporate Sector Purchase Programme (CSPP) is also used as a reference.
3. **Asset level:** taking into account the maturity of the security, with the assumption that instruments with longer maturities are more exposed to climate-related risks and therefore assigned higher risk coefficients (ECB, 2025).

The uncertainty score is applied in addition to standard collateral haircuts, potentially reducing the final collateral value of the asset. This method systematically and forward-looking integrates climate risks into the monetary policy framework.

#### 4. What is the implementation timeline?

The Climate Factor is planned to enter into force in the second half of 2026. During this process, the Eurosystem will update its technical infrastructure and finalize the legal framework. In addition, the methodology will be completed in line with the timetable using updated climate data.



Source:ECB

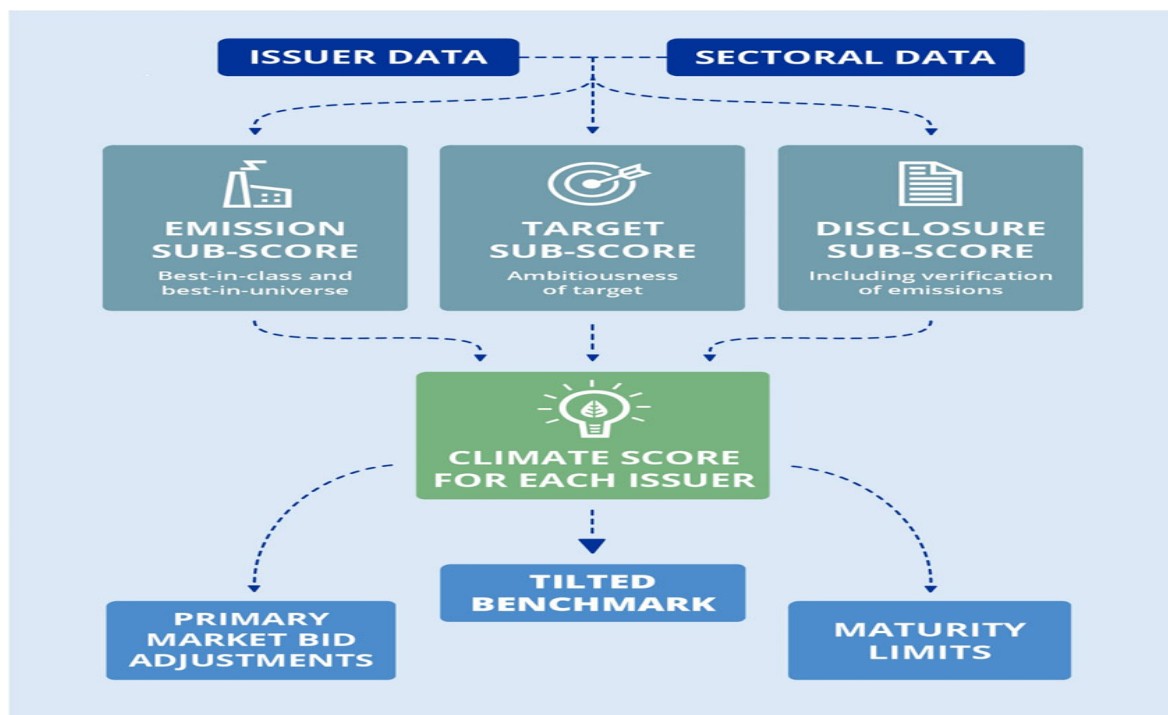
#### Dimensions of the Climate Factor within the Policy Framework

It is no longer sufficient for central banks' risk management to focus solely on market fluctuations, credit, or liquidity problems. Including forward-looking climate scenarios in this process is critical to enhancing the resilience of the financial system. In this respect, the Climate Factor encourages banks, insurance companies, and investment funds to restructure their risk models to account for climate-related uncertainties. This shows that the impacts of climate change are not limited to macroeconomic risks but are also becoming decisive criteria in pricing processes.

The Climate Factor can be approached in three dimensions:

1. **Expanding risk management tools:** collateral frameworks must be broadened to include climate risks. In this context, forward-looking and scenario-based risk adjustments are introduced in addition to standard haircuts, allowing potential climate shocks not yet fully reflected in market prices to be included in collateral valuation.

2. **Using forward-looking climate scenarios:** the ECB incorporates not only past performance but also scenario analyses that capture potential physical and transition risks, strengthening the resilience of the financial system against climate-related threats.
3. **Transition from market neutrality to green differentiation:** the ECB demonstrates that market neutrality is not an absolute rule and that differentiated approaches considering environmental risks may be applied when necessary. As the literature also supports, tilting practices — giving greater weight to low-carbon assets and lower weight to carbon-intensive assets in portfolios — can significantly reduce the carbon intensity of bond portfolios. In this sense, the Climate Factor serves both as a tool enabling monetary policy transformation and as a mechanism that limits risks while encouraging capital flows toward sustainable sectors.



Source:ECB

## Systemic Impacts on the Financial System

The Climate Factor is not limited to collateral valuation but is also expected to shape the distribution of financial resources. Adjustments based on uncertainty scores will influence the portfolio choices of banks and investors. The effectiveness of this process, however, depends on the “joint action” vision emphasized by President Lagarde, meaning collaboration with other stakeholders. Thus, the Climate Factor provides a reliable reference point for markets while turning climate risks into a factor that directly affects pricing and investment decisions rather than being treated solely as an environmental issue.

Based on the ECB and European Systemic Risk Board's documents and relevant literature, the systemic impacts of the Climate Factor can be categorized into four dimensions:

### 1. Impacts on liquidity, risk premia, and borrowing costs

The framework sets out that the value of high-emission corporate bonds will be determined through risk-based adjustments added to existing discount rates. Assets with higher uncertainty scores may be subject to larger haircuts, making them harder to use as collateral within the Eurosystem, reducing their liquidity, and increasing capital costs for companies. This demonstrates that climate transition risks become a direct pricing factor for investors.

According to the ECB's FAQ document, the Climate Factor's impact on banks and financial institutions (counterparties) is expected to be limited, as corporate bonds make up only a small share of their collateral pools, and low debt levels are likely to preserve overall liquidity conditions.

### 2. Portfolio effects

In the short term, the Climate Factor is expected to have limited effects on liquidity conditions. However, in the long run, a shift toward low-emission assets is likely. The relative advantage of green assets may reshape commercial banks' collateral strategies and encourage the inclusion of environmental criteria in credit policies. Similarly, in capital markets, a "green collateral premium" is expected to emerge over time. This provides sustainable assets with a financing advantage while increasing cost pressures on carbon-intensive sectors.

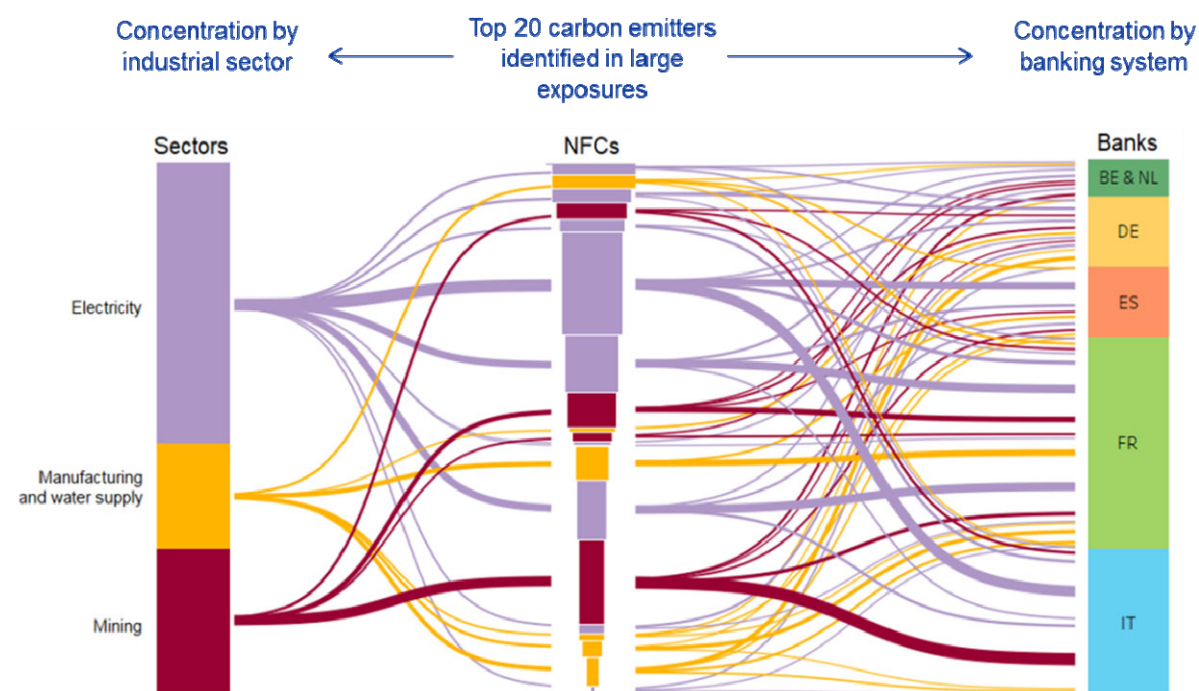
### 3. Just transition and global capital flows

While the Climate Factor supports the redirection of capital toward environmentally friendly areas, ensuring a socially balanced transition is equally important. Therefore, the principle of a just transition is critical to steering global capital flows in an inclusive and balanced way.

### 4. Greenwashing and regulatory challenges

Transparency and accountability are essential in sustainable finance. The inconsistency between companies' environmental commitments and their actual practices may limit the effectiveness of the Climate Factor. Mitigating such risks depends on strengthening oversight and supervision mechanisms to ensure reliable data flows.

Although green bond issuance has risen in recent years, these instruments still represent a relatively small share of the overall market. In addition, inconsistencies in reporting and methodological weaknesses limit their effective use. For a healthy transition, more transparent, reliable, and standardized financial products need to be developed. Lasting effectiveness, however, requires the ECB's framework to be implemented in coordination with national authorities, supervisory bodies, and civil society.



Source: ECB

## Conclusion: The Financial System Reshaped by the Climate Factor

At the macro level, the Climate Factor represents not only stronger risk management within central banking but also a structural paradigm shift that channels capital flows according to environmental sustainability criteria. While its short-term effects on banks' liquidity conditions may be limited, it is expected in the medium and long term to increase the borrowing costs of carbon-intensive sectors and redirect capital toward more sustainable areas. This approach introduces a new valuation perspective across all layers of the financial system, from portfolio choices and collateral valuations to credit conditions and corporate borrowing costs. If implemented transparently and inclusively, the Climate Factor can also serve as a mechanism that promotes sustainability and just transition. Achieving this, however, requires joint action between regulators and financial actors.

From an international perspective, beyond being a technical regulation, the Climate Factor offers a guiding framework for other countries. For Turkey, the inclusion of climate risks in monetary policy by the Central Bank of the Republic of Turkey would not only enhance stability in the banking sector but also strengthen the country's position in the EU accession process. Companies adopting low-emission transition strategies can access financing on more favorable terms and become more attractive to investors and consumers. Conversely, firms that fail to adapt may face higher borrowing costs and external market restrictions. As noted by Ülkü Doğan (2023), incorporating climate risks into credit assessments, reducing carbon-intensive assets in bank portfolios, integrating climate scenarios into macroeconomic models, improving risk reporting standards, and prioritizing green assets in collateral structures are critical steps for Turkey to adapt the Climate Factor into its monetary policy and financial stability framework. The IMF has also emphasized the importance of central banks integrating climate risks into policymaking processes to safeguard price and financial stability (IMF, 2023). Thus, for Turkey, the Climate Factor represents both a pressure for adaptation and an opportunity for green financing.

Finally, sustainability reports — particularly the detailed disclosure of transition plans and references to climate scenarios — provide essential data for reliable issuer-level assessments. In its 2022 letter to ISSB Chair Emmanuel Faber, the ECB underlined the need for transparency and comparable data. These standards are expected to play a crucial role in measuring the sensitivity of assets to climate risks under the Climate Factor. Hence, sustainability reports not only enhance transparency but also hold the potential to play a decisive role in access to financing.

In conclusion, the Climate Factor has evolved beyond being a complementary element of environmental policies. It has become a new guiding mechanism with direct influence on monetary systems and investment decisions. Ensuring its fair, transparent, and transition-oriented implementation depends on public policy alignment, strong regulatory frameworks, and societal oversight. Otherwise, it risks reducing social benefits and deepening inequalities.



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