Deliverable 2

Good Practice Report

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Contents

1. Introduction

This document is a continuation and enhancement of the initial report titled "Bridging the Climate Financing Gap with Public Policy Instruments: Deliverable 2. Good Practice Report," which was originally conducted by ICF on January 27, 2023. The objective of the original report was to inform the design of Poland’s Sustainable Finance Roadmap (SFR) and associated Sustainable Finance Action Plan (SFAP) through the identification of good practices in the field of sustainable finance policies across the EU. This document, refined and amended by PricewaterhouseCoopers (PwC), is to refocus the recommendations to the Czech Republic context and to provide the most current insights and developments within sustainable finance and public policy instruments, enriching the foundational work done by ICF.

The document serves as a comprehensive review that sheds light on the current practices, challenges, and innovations in sustainable finance across seven EU Member States. More specifically the five countries used in the original report (Austria, Ireland, Italy, France, and Lithuania) with two additional countries – Germany and the Netherlands. It underscores the diverse landscape of approaches and methodologies adopted by different countries, highlighting the lack of standardization and the challenges it poses.

The updated Good Practice Report is the second Deliverable of the project “Sustainable Finance Policy Options in the Czech Republic,” funded by the European Union (EU) via the Technical Support Instrument, managed by the European Commission Directorate General for Structural Reform Support (DG REFORM). The project is implemented by a team led by PwC with the Czech MoF as the beneficiary.

The project aims to mobilize the Czech public and private sector towards the use of sustainable finance instruments and prepare high-quality supporting materials based on good international practice, feedback from relevant stakeholders and aligned with the acquis communautaire. The assignment should contribute to the establishment of a coherent and effective national sustainable finance ecosystem. This good practice report represents one of the first steps on this journey.

The report is structured as follows:

- Section 2 presents the key takeaways from the good practices for the Czech Republic
- Section 3 presents an overview of the methodology implemented to develop the original and the current report.
- Section 4 presents the revision and extension of the good practices identified in the original report. These practices focus on the following areas:
  - General Approach to Sustainable Finance
  - Non-financial Reporting, Disclosure & Data Collection
  - Capital Supply & Allocation: Innovative Financial Products
  - Risk Management
  - Stakeholder’s Engagement, Capacity Building & Sustainable Finance Literacy
- Section 5 presents concluding remarks and next steps.

2. Key Takeaways

1. **Aiding the Role of Ministries of Finance, Central Banks, and Development Banks:** The Czech Republic should ensure that its Ministry of Finance (MoF), along with the Czech National Bank and the National Development Bank, takes a leading role in shaping and implementing sustainable finance policies. These institutions can provide the necessary regulatory framework, incentives and support needed to facilitate the transition towards mainstreaming sustainable finance.
2. **Existence of National Sustainable Finance Roadmaps and Action Plans:** It is crucial for the Czech Republic to develop and implement a comprehensive Sustainable Finance Roadmap (SFR) and Action Plan (SFAP). This plan should define a vision, specific objectives, strategies, actions, and timelines for integrating sustainability into the financial sector and wider national ecosystem and should align them with broader EU sustainability goals and architecture, with the EU Sustainable Finance Strategy of 2021.
3. **Institutionalisation of Platform for Sustainable Finance:** Establishing a dedicated institutionalized platform for sustainable finance with a clear mission and Statutes endorsed by the Czech Cabinet can greatly assist in the effective coordination and implementation of the national SFR and SFAP. The current platform run by the MoF presents a good format for establishing such body. This platform supported by the secretariat at the MoF would serve as a hub for collaboration and consultations among various stakeholders, including government bodies and entities, regional and local self-governments, financial sector associations, and public and private sector associations, facilitating exchange of ideas, opinions, best practices, know-how and resources. The platform would drive necessary regulatory and market developments, align participants, and provide quality feedback on various governmental and EU proposals.
4. **EU Taxonomy / Other Standards Harmonization:** The Czech Republic should work towards harmonizing and aligning its sustainable finance practices with EU-wide standards, particularly the EU Taxonomy for sustainable activities (EU Taxonomy) and the European Sustainability Reporting Standards (ESRS) across its national external framework on a continuous basis. This harmonization and alignment are crucial for ensuring high performing enabling environment facilitating efficiency, consistency, transparency, and credibility for sustainable finance. It also helps attract international investment, support cross-border financial activities, and meet national sustainability obligations, in particular the Paris Agreement.
5. **Support for Green Bonds and Innovative Financial Products Issuance:** Encouraging and supporting the issuance of green bonds and other innovative financial products is vital for mobilizing capital towards sustainable investment. The Czech Republic should create an effective enabling environment for both public and private sector investment for these instruments, which includes providing regulatory support, robust institutional set-up, offering incentives, and building capacity and alignment among issuers and investors.
6. **Incorporation of MoF Competence in Sustainable Finance in the Czech Governance Act:** An explicit insertion of the competence of the MoF with respect to "sustainable finance" in Act No. 2/1969 Coll., on the Establishment of Ministries and Other Central Bodies of the State Administration of the Czech Socialist Republic, as amended, is necessary. Given the horizontal nature of sustainability, the ownership of the whole theme should be unequivocal and indisputable so that the management and development of the national sustainable finance ecosystem is firmly embedded in legal terms. In this manner, the MoF can effectively play its role which is common in most of the national sustainable finance arrangements analysed in this Report.

3. Methodology

Introduction Disclaimer:

In the process of updating the report, PwC undertook the following series of actions to ensure that the document is up to date, comprehensive, and relevant to the beneficiary.

The initial step was updating the information provided in the original document "Bridging the Climate Financing Gap with Public Policy Instruments: Deliverable 2. Good Practice Report."

In the elaboration of the Polish Good Practice Report, the following four steps were followed:

Step 1: Selection of Seven EU Member States

A series of socio-economic criteria (i.e., GDP, GDP per capita, total fixed assets and employment) and several criteria linked to the level of maturity of EU Member States in sustainable finance (i.e., volume of sovereign and non-sovereign GSS (Green, Social, and Sustainability) bond issuance to date, presence of a national sustainable finance platform, existence of a national SFR or SFAPs were agreed with the MoF and DG REFORM in order to characterise the preferred EU Member States for inclusion in this Report.

Based on a mapping of the EU-27, five EU Member States were selected by the Polish MoF and additional two were selected to be included in the update by the Czech MoF. This selection was based on their level of leadership and/or recent policy developments in sustainable finance and the common characteristics between their capital market and the Czech capital market. The overall rationale for selection is set out in Box 1 below. The final selection was also validated by the MoF and DG REFORM.

Step 2: Detailed Analysis and Interviews

Based on the "Dashboard on Scaling Up Green Finance", designed by the Network for Greening the Financial System (NGFS), each of the selected EU Member States was assessed, based on a detailed fiche covering both quantitative and qualitative information. The NGFS dashboard, which was designed to measure the progress of any specific market in green finance, was complemented with three elements:

1) More specific indicators on the state of the capital market.
2) An assessment of the key barriers limiting the flow of finance towards sustainable activities; and
3) A detailed mapping of existing sustainable finance policies and measures (PaMs) put in place in each selected Member State.

Each detailed analysis was then used as a basis for the organization of semi-structured interviews, conducted by ICF within 5 original states, with the national ministries responsible or co-responsible for sustainable finance policies. Additional two reviews for Germany and the Netherlands were conducted by PwC. Seven systematic approaches were closely observed in the following countries:

- **France:** Ministry for the Ecological Transition and Territorial Cohesion[1];
- **Ireland:** Department of Finance[2];
- **Italy:** Ministry of Economy and Finance[3];
- **Lithuania:** Ministry of Finance[4];
- **Austria:** Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)[5];

[1] See https://www.ngfs.net/sites/default/files/medias/documents/ngfs_dashboard_scaling_up_green_finance_october_2022.pdf.
[2] gov.ie - Department of Finance (www.gov.ie).
[3] Ministero dell'Economia e delle Finanze - Home page (mef.gov.it).
[4] Ministry of Finance of the Republic of Lithuania (lrv.lt).
[5] Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (bmk.gv.at).

- **The Netherlands**[6]**:** Ministry of Finance and The Dutch National Bank[7]; and
- **Germany:** Federal Ministry for Economic Affairs and Climate Action[8].

Box 1: Rationale for Selection of Member States for Assessment

- **Austria**: The government of Austria is currently working to adjust its legal framework to ensure the Austrian finance sector is aligned with the Paris climate targets. The objective is for Austria to achieve climate neutrality by 2040. In May 2022, the Austrian Ministry for Climate Action launched the Green Finance Alliance to support financial companies on their pathway towards achieving climate neutrality. It is one of the only government-backed initiatives calling upon financial companies to make a voluntary, yet binding, pledge to align their portfolios with the 1.5-degree climate target set by the Paris Agreement (this requirement will soon enter EU law). The geographic proximity to the Czech Republic also makes Austria an interesting case to learn from.[9]
- **France**: France is regarded as a pioneer in the EU in the field of sustainable finance. In 2017, the French government commissioned the report titled “French strategy for green finance” to gather recommendations on how France could progress on this topic. This initial scoping report, which does not represent an official strategy of the government, was followed by multiple political and regulatory initiatives in this field. The government also adopted very progressive legislation in the field of non-financial reporting, creating important potential for peer-to-peer learning.[10]
- **Ireland**: After launching the sustainable transition of its financial market, the “Ireland’s Sustainable Finance Roadmap” was published in 2021, resulting from the collaboration of multiple stakeholders from both public and private sectors. The roadmap is not an official document, yet it falls under the “Ireland for Finance” strategic framework supporting the further development of the international financial services sector in Ireland to 2025. In a short period of time, Ireland managed to mobilize key actors to inform its sustainable finance roadmap and acquire a strong sustainable finance maturity.[11]
- **Italy**: Italy scored high in our ranking due to its recent progress in the field of sustainable finance. In 2021, the Italian government issued a total of EUR 13.5 bn in Sustainable Green Bonds (SGB), with the first tranche of EUR 8.5 bn establishing a new Eurozone record for an inaugural SGB. It also set up a new inter-ministerial committee to support the transition of its finance market. In 2020-21, the Italian Ministry of Economy and Finance benefited from the support provided by DG REFORM, and implemented together with ICF, for the design of their national SFAP and they went through the same process as that envisaged under this project, creating important peer-to-peer learning opportunities.[12]
- **Lithuania**: Although a much smaller economy than the Czech Republic, Lithuania shows several common socio-economic characteristics to the Czech Republic, for example, in terms of GDP per capita and employment level. Given its more recent transition to a free market and the EU, Lithuania also shows similar characteristics to the Czech economy, for example, in terms of the level of development of its capital market. Interestingly, Lithuania also benefited from the support of DG REFORM implemented together with the European Bank for Reconstruction and Development (EBRD) to design their national SFAP, which was published in December 2021 and is now being implemented.[13]
- **The Netherlands**: The Netherlands is recognized for its forward-thinking approach to sustainable finance. The Dutch government has been proactive in developing green financial instruments, such as green bonds, and has a strong focus on fostering a green fintech ecosystem. The Netherlands' strategies involve collaborating with various stakeholders to create innovative financial solutions aimed at driving sustainable projects. These efforts are complemented by a commitment to enhancing

[6] See https://www.government.nl/ministries/ministry-of-finance.
[7] See https://www.dnb.nl.
[8] See https://www.bmwk.de/Navigation/EN/Home/home.html.
[9] See https://www.bmk.gv.at/en/green-finance/alliance.html.
[10] See https://www.vie-publique.fr/rapport/37266-pour-une-strategie-francaise-de-la-finance-verte.
[11] See Irish-SusFinance-Roadmap-FINAL-FINAL-OCTOBER-2021.pdf (sustainablefinance.ie).
[12] See https://www.mef.gov.it/en/focus/Btp-Green-the-new-sovereign-bond-to-finance-Italys-ecological-transition-00001/.
[13] See https://finmin.lrv.lt/uploads/finmin/documents/files/Strategy_and_Action%20Plan_2021-12-30_small.PDF.

transparency and ESG (Environmental, Social, and Governance) disclosures within the financial sector. The Dutch approach is characterized by a blend of regulatory support and market-driven initiatives, making it a dynamic and influential player in the sustainable finance landscape.[14]

- **Germany:** Germany's commitment to sustainable finance, particularly evident in its innovative green finance initiatives, makes it an exemplar in the EU. The German Sustainable Finance Strategy, aligned with the 2030 Agenda for Sustainable Development[15], aims to establish Germany as a leading center for sustainable finance. A hallmark of this approach is the issuance of green bonds by the KfW (Kreditanstalt für Aufwiederbau - German development bank) Group[16], one of the world's largest issuers. Notably, Germany introduced a unique concept in 2020 - twin bonds - where every green Federal security is paired with a conventional Federal security, sharing similar characteristics but specifically earmarked for environmental spending. This approach has been instrumental in enhancing transparency and boosting investor confidence in green investments. Germany's efforts in integrating sustainability into corporate reporting and risk management, as well as advancing legislative measures like the Corporate Due Diligence Obligations in Supply Chains Act[17], further demonstrate its leadership in embedding sustainability into the financial ecosystem. Germany's comprehensive approach, focusing on innovative financial instruments and robust regulatory frameworks, presents a model of effective sustainable finance practices that can offer valuable insights for the Czech Republic.

Step 3: Additional research

PwC has enhanced the original report by ICF by adding new sections, including a detailed analysis of the impact of legislative frameworks and numerous case studies. These improvements aim to provide a deeper and more comprehensive delivery on the topic of research. Furthermore, the report has been broadened to encompass insights from two Beneficiary chosen countries, offering a varied and extensive perspective on sustainable finance practices and policies. This expansion is particularly valuable as it includes countries with certain importance or similarities to the Czech Republic, thereby serving as a rich source of inspiration and comparative analysis for sustainable finance models.

To improve the report's usability, PwC rearranged the order of the chapters. This restructuring was aimed at enhancing the readability and logical flow of the document, thereby providing a more intuitive and cohesive narrative for the readers.

PwC, after a consultation with the Beneficiary, decided not to cover the benchmarking of the Czech capital market against its peers. This content deemed more suitable for in-depth analysis, which is slated to be covered in a forthcoming diagnostic report.

Step 4: Comparative Analysis

Based on the results of Steps 1, 2, and 3 a comparative analysis was completed to identify the best practices of most relevance to the Czech capital market. This comparative analysis was complemented by a review of the most recent literature on the topic. This forms the body of this Report.

[14] See https://www.dnb.nl/media/cpgjlbtr/76642-dnb-sustainable-fin_en_web.pdf.
[15] See https://sustainabledevelopment.un.org/memberstates/germany.
[16] See https://www.kfw.de/PDF/Investor-Relations/PDF-Dokumente-Green-Bonds/Green-Bond-Framework-V2022.pdf.
[17] See https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChcSEwj8iIObq_2CAxXwtmgJHbroAckYABAAGgJ3Zg&ae=2&gclid=EAIaIQobChMI_IiDm6v9ggMV8LZoCR266AHJEAAYASAAEgJoC_D_BwE&ohost=www.google.com&cid=CAASJORoPY1uHLqjgHo0Tr9rjePMw6vVVg7gsCwP7aQHXlqiVryTVg&sig=AOD64_0HEtzSN6cYL4MTvd9wJWv1rnW9gg&q&adurl&ved=2ahUKEwiPhPyaq_2CAxWKxAIHHaEoBXAQ0Qx6BAgBEAE&nis=2&dct=1

4. Update on the Good Practices Report

4.1 General Approach to Sustainable Finance

(Polish Good Practice Report, page 28 et seq.)

General Trends & Good Practices

- **Variation in sustainable finance approaches:** While the EU has a robust sustainable finance strategy[18], there is a noticeable lack of uniformity in sustainable finance strategies at the national level among the assessed EU Member States.
- **Challenges due to lack of national roadmaps**: The absence of a comprehensive, overarching national roadmap or action plan poses challenges for both financial and non-financial institutions. This makes it difficult for them to effectively navigate through the sustainable transition and keep abreast of relevant developments and upcoming steps.
- **Diverse structures yet common goals**: Although the structure of existing roadmaps and action plans varies, they all align with a specific vision or set of sustainability objectives.
- **Differences in roadmap content and structure**: The reviewed roadmaps and action plans demonstrate a variety of approaches in both their structure and content.
- **Critical role of Ministries of Finance**: Ministries of Finance play a pivotal role in the design and implementation of SFRs and SFAPs across different Member States. Therefore, it is crucial to equip these ministries with appropriate skills and capabilities and ensure robust cooperation with other relevant ministries.

The area of Sustainable Finance in EU has been dynamically shaped since the adoption of the EU Sustainable Finance Strategy in July 2021. The EU Sustainable Finance Strategy is a comprehensive set of measures adopted by the European Commission to enhance the flow of funds towards sustainable economic activities. This strategy is pivotal in supporting the transition to a sustainable economy, focusing on four main pillars:

- **Transition Finance:** This involves financing investments that help reduce greenhouse gas emissions and other environmental impacts, transitioning towards a climate-neutral and sustainable economy. It supports companies at various stages of sustainability, offering flexibility for those transitioning over time.
- **Inclusiveness:** The strategy aims to ensure that sustainable finance is inclusive, supporting a broad range of companies, including smaller ones, in their sustainability journey.
- **Resilience:** It emphasizes the resilience of the financial sector, aiding in sustainable recovery from crises like the COVID-19 pandemic and contributing to a robust, sustainable economy.
- **Global Ambition:** The EU seeks to lead globally in sustainable finance, setting high standards and coordinating international efforts through platforms like the International Platform on Sustainable Finance.

The EU Sustainable Finance Strategy is essential in steering private investment towards a climate-neutral, resource-efficient, and equitable economy, supplementing public funding. **This initiative is crucial for achieving the European Green Deal's goals and adhering to the EU's international commitments on climate and sustainability.** It encompasses financing both environmentally friendly projects and those in transition towards such standards. Central to this strategy is aligning financial flows with the EU's target of a 55% reduction in emissions by 2030, relative to 1990 levels, through a blend of legislative and non-legislative actions. Recognizing the significant role of the financial sector in fulfilling these objectives, the strategy highlights the need for improved sustainability data from companies, thus aligning financial activities with the principles of low-carbon and climate-resilient development as outlined in the Paris Climate Agreement and the UN 2030 Agenda for Sustainable Development.

[18] See https://finance.ec.europa.eu/publications/strategy-financing-transition-sustainable-economy_en.

A key component of the strategy is **the EU Taxonomy, a classification system establishing a list of environmentally sustainable economic activities**. This system aids companies in assessing if their activities align with the EU's sustainability goals, featuring detailed technical screening criteria for different environmental objectives. Additionally, **the strategy incorporates the Corporate Sustainability Reporting Directive (CSRD).** According to the CSRD, all significant firms, including all listed companies except specific listed micro-enterprises, must comply with sustainability reporting standards. This also brings non-capital-market-oriented large companies under the umbrella of the CSRD.

Another pivotal aspect of the strategy is **the proposal for a Regulation on ESG ratings, aimed at enhancing transparency and improving rating quality.** Under this proposal, EU entities issuing ESG ratings would require authorization, and they must disclose their rating methodologies, models, and underlying assumptions. This regulation also tackles governance and conflict of interest issues, necessitating a separation of business activities to prevent potential conflicts. Furthermore, **the European Green Bond Standard (EUGBS), a voluntary scheme designed to boost and heighten the environmental aspirations of the green bond market**, is integral to this strategy. This standard is designed to help issuers and investors of green bonds by ensuring that the funds raised are allocated to projects aligned with the EU taxonomy, maintaining transparency, and meeting rigorous sustainability requirements.

Another key part of the EU framework is the **Sustainable Finance Disclosure Regulation (SFDR)**, introduced in March 2021. This regulation is pivotal in enhancing transparency regarding sustainability claims by financial products, thereby addressing the issue of greenwashing. It mandates that financial market participants disclose how they incorporate sustainability risks into their investment decisions and evaluate the potential impact of such risks. **Importantly, the SFDR empowers the Commission to adopt delegated and implementing acts, specifying how authorities and market participants should comply with the directive's obligations.** This ensures a structured and uniform approach to compliance across the EU. The regulation distinguishes between investment products based on their sustainability characteristics, emphasizing those with environmental or social traits and those with defined sustainability objectives. Compliance encompasses disclosures at both the entity and product levels, detailing policies on sustainability integration and the effects of investment decisions on sustainability factors. Additionally, the SFDR works in conjunction with the EU's Taxonomy Regulation.

Despite these efforts, the summary of general trends and practices above highlights **a lack of a standardized approach to sustainable finance across the selected EU Member States.** As evidenced by the diverse strategies outlined in Table 1, countries have adopted various approaches and formats for their sustainable finance strategies, ranging from concise key action lists in Austria to comprehensive recommendation reports in France. The status of these documents also varies, with some being collaborative efforts with private stakeholders, such as in Ireland, while others involve partnerships with international organizations, such as in Lithuania. Despite these differences, all these documents have been instrumental in guiding the respective Member States' efforts in sustainable finance. To conduct the analysis in this Report, recent documents and reports were prioritized when multiple sources were available for each assessed Member State. The findings additional to the Polish Good Practices Report are highlighted by underlining in the table below.

Table 1: Overview of Existing SFRs or Associated SFAPs

Country	Status of SFRs Across the Analysed Member States
Austria	• A strategy on sustainable finance was established as part of the Austrian national Recovery and Resilience Plan. However, no separate SFR or SFAP has yet been issued by the government. This strategy has been updated in 2023 and undergoes a periodical review.[19]
France	• The French government has commissioned different reports from members of the French Parliament or external experts that have resulted in roadmaps and action plans. These include:

[19] See https://www.bmk.gv.at/en/green-finance/finances/eu-strategy.html.

	– 2017: French strategy for green finance[20]; – 2018: For the creation of France Transition, Risk sharing mechanisms to mobilise EUR 10 bn of private investments for environmental transition[21]; – 2020: Choose a green finance supporting the Paris Agreement (in French only)[22]; and – 2022: Making the Paris financial centre a reference for climate transition: a framework of actions (in French only)[23]. • In 2018, a collaborative effort among the UN Principles for Responsible Investment (UN PRI), the United Nations Environment Programme Finance Initiative (UNEP FI), and The Generation Foundation, alongside Finance for Tomorrow, led to the publication of a sustainable finance roadmap for France[24]. This document, which is part of the “Fiduciary Duty in the 21st Century” programme, offers a set of strategic recommendations directed at institutional investors and policymakers. Notably, this initiative extends beyond France, encompassing Ireland and several other countries globally, emphasizing a widespread commitment to sustainable finance principles.
Ireland	• The Irish Sustainable Finance Roadmap[25], published in October 2021, is a non-official government document aligning with the “Ireland for Finance” strategic framework, aimed at enhancing the international financial services sector in Ireland through to 2025. The roadmap was supported by Skillnet Ireland, an agency of the government focusing on competitiveness, productivity, and innovation. In 2022, it was complemented by the Ireland's International Climate Finance Roadmap[26], outlining plans to escalate climate financing to at least EUR 225 million by 2025. • In addition, The Ireland for Finance Strategy[27], a governmental initiative, is structured around five key themes: sustainable finance, fintech and digital finance, diversity and talent, regionalisation, and operating environment. Its implementation is driven by annual action plans, with the 2023 update placing a significant emphasis on sustainable finance. • In 2018, the collaboration between the PRI, the UNEP FI, and The Generation Foundation, alongside Sustainable and Responsible Investment Forum (SIF) Ireland, resulted in the release of the “Fiduciary Duty in the 21st Century Ireland Roadmap”.
Italy	• In 2016, the United Nations Environment Programme (UNEP) Inquiry into the Design of a Sustainable Financial System partnered with Italy's Ministry of Environment, Land and Sea to release the “Report of the Italian National Dialogue on Sustainable Finance”[28]. • In 2022, Italy developed its National Action Plan (NAP) for Policy Coherence for Sustainable Development, aligning with the 2019 OECD Recommendation[29]. This plan focuses on improving coordination within public administration to integrate sustainable development more effectively and inclusively across various policy areas and government levels. It also considers the impact of domestic policies on developing countries, with a specific chapter dedicated to Policy Financing and Impacts.

[20] See https://www.economie.gouv.fr/files/files/PDF/2017/executive-summary_green-finance.pdf.
[21] See https://financefortomorrow.com/app/uploads/2019/02/Rapport-Canfin-Zaouati_ExecSum_EN.pdf.
[22] See https://minefi.hosting.augure.com/Augure_Minefi/r/ContenuEnLigne/Download?id=90AA3BA2-50B8-4E96-BAE2-769EACCA0E8A&filename=Rapport%20d%27Alexandre%20Holroyd_Choisir%20une%20finance%20verte%20au%20service%20de%20l%E2%80%99Accord%20de%20Paris.pdf.
[23] See https://www.vie-publique.fr/sites/default/files/rapport/pdf/284351.pdf.
[24] See https://www.unpri.org/download?ac=17125.
[25] See https://www.sustainablefinance.ie/wp-content/uploads/2021/10/Irish-SusFinance-Roadmap-FINAL-FINAL-OCTOBER2021.pdf.
[26] See https://www.irishaid.ie/news-publications/publications/publicationsarchive/2022/july/irelands-international-climate-finance-roadmap-.html.
[27] See https://assets.gov.ie/269866/e6a2d7f2-d3d5-4d01-ae46-9eb3e2f80dbf.pdf.
[28] See https://wedocs.unep.org/bitstream/handle/20.500.11822/16801/Financing_the_Future_EN.pdf?sequence=1&%3BisAllowed.
[29] See https://www.agenziacoesione.gov.it/wp-content/uploads/2023/02/Italy-54226722-en.pdf.

	• In 2020-21, the Italian Ministry of Economy and Finance, aided by a DG REFORM project, developed a detailed SFAP which now guides the newly established Italian Sustainable Finance Platform. Established at the end of 2022, this platform, supported by various financial and environmental authorities, aims to mobilize private finance for Italy's sustainable transition, aligning with European and international commitments. It focuses on coordinating authorities, sharing best practices, conducting in-depth studies, and providing solutions for private investment in sustainable projects, acting as a forum for stakeholder dialogue[30].
Lithuania	• In 2021, the Lithuanian government benefited from the support of a DG REFORM project to design a SFS and SFAP. This work was carried out together with the EBRD and resulted in the publication of a recommendation report. This report is now being used as the basis for the design of sustainable finance policies by the government. • The Ministry of Finance prepared The Green Finance Action Plan for 2023-2026, which is currently open for public consultation. The purpose of the plan is to promote the development of green public and private finance in Lithuania, creating a favourable environment for both business and financial market participants investing in it.
Germany	• The German government’s sustainability policy is based on the 2030 Agenda for Sustainable development. The 2030 Agenda is being adopted primarily via the German Sustainable Development Strategy, which focuses equally on all 17 Sustainable Development Goals (SDGs) and was last revised in March 2021.[31] • The German Sustainable Finance Strategy (SFS), published in May 2021[32], was developed collaboratively by the Federal Ministry of Finance, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, and the Federal Ministry for Economic Affairs and Energy.
Netherlands	• The sustainable finance strategy in the Netherlands is characterized by a strong governmental influence and the active role of De Nederlandsche Bank (DNB). The DNB established the Sustainable Finance Platform in 2016 and produced Sustainable Finance Strategy, which is annually actualised[33], fostering collaboration among financial institutions, government ministries, and supervisory authorities. This platform addresses barriers to sustainable financing, driving initiatives that include risk management, regulatory compliance, and education. • In 2019 the Dutch government has set ambitious targets in the National Climate Agreement[34] for reducing greenhouse gas emissions. Additionally, it is considering a legal framework for social enterprises with ESG elements and has enforced corporate governance reforms, including gender diversity quotas and ESG reporting requirements for listed companies.[35]

The EU's sustainable finance agenda has significantly influenced the advancements in sustainable practices among its Member States in recent years. France stands out as an early adopter and leader in this realm, having initiated its sustainable finance journey even before the EU's formal sustainable finance initiative.

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[30] See https://www.dt.mef.gov.it/en/attivita_istituzionali/sistema_bancario_finanziario/finanza_sostenibile/Tavolo_finanza_sostenibile/index.html.
[31] See https://www.bundesregierung.de/breg-en/search/ sustainable-development-strategy-2021-1875228.
[32] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[33] See https://www.dnb.nl/media/cpgjlbtr/76642-dnb-sustainable-fin_en_web.pdf.
[34] See https://www.government.nl/documents/reports/2019/06/28/climate-agreement.
[35] See https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiE_uvRs9qCAxVN0AIHHQpzDM8QFnoECAoQAw&url=https%3A%2F%2Fwww.government.nl%2Fdocuments%2Freports%2F2019%2F06%2F28%2Fclimate-agreement&usg=AOvVaw2E2oUQWjeqj0vVSa-9Affn&opi=89978449.

As a forerunner, France set a precedent in 2016 by mandating institutional investors and companies to disclose how they integrate climate change and other ESG factors into their strategic and decision-making processes[36]. This proactive approach is discussed in more depth in Section 4.2. France's early actions have catalysed numerous developments within its market, leading to its status as a highly developed green capital market. This includes pioneering efforts in addressing nature-related risks, further underscoring its leading role in sustainable finance.

The release of the European “Action Plan: Financing Sustainable Growth” in 2018[37] and the “Strategy for financing the transition to a sustainable economy” in 2021[38], along with the implementation of critical EU legislation like the Non-Financial Reporting Directive (NFRD) and its advancement Corporate Sustainability Reporting Directive (CSRD), has spurred further advancements in sustainable finance at the national levels. The European Commission's provision of technical assistance for the creation of national SFRs and SFAPs significantly bolstered this trend. Of the seven Member States analysed, two have directly benefited from this support. Additionally, countries like Belgium or Poland received assistance from the DG REFORM, demonstrating the EU's commitment to facilitating a unified move towards sustainable finance across its Member States.

The approach to delineating strategy, roadmap, and action plan documents varies significantly among EU Member States. For instance, France exemplifies a comprehensive approach by having all three documents. Contrastingly, countries like Ireland and Lithuania have adopted a two-tiered approach, combining a strategy document with either a roadmap or an action plan. On the other hand, Austria and Italy represent cases where only one of these documents is currently in use, indicating a less segmented approach to strategic planning in these nations.

The lack of a national roadmap or action plan can significantly hinder the ability of financial and non-financial institutions to effectively navigate the sustainable transition. Such a roadmap is crucial for providing a clear and comprehensive understanding of relevant developments and the expected future steps. In this regard, the Irish roadmap and Lithuanian strategy serve as exemplary models. They offer a coherent set of high-level recommendations paired with specific measures, brief rationales, and detailed implementation plans, including the identification of responsible stakeholders and timelines.

While existing roadmaps, action plans, and associated reports adopt varied structures, they all underpin a specific vision or set of objectives. It is crucial for these roadmaps to offer specific, actionable recommendations while concurrently embedding them within a broader vision or set of objectives. This dual approach crafts a compelling narrative for the roadmap, linking even the most technical elements to a wider context. Such a narrative is fundamental for effective communication about the roadmaps, ensuring they resonate with and secure the buy-in from a diverse array of stakeholders. The roadmaps reviewed showcase a range of visions, each tailored to their specific context and goals, illustrating the diverse approaches to sustainable finance across different jurisdictions:

- **Austria**'s green finance initiative is focused on addressing the funding shortfall required to meet its 2030 climate and energy targets, estimated at EUR 17 billion annually[39]. This objective underscores the initiative’s direct contribution to Austria's broader environmental goals.
- **France**'s latest roadmap aims to chart a definitive course for aligning the Paris financial centre with the objectives of the Paris Agreement. The goal is to transform Paris into a leading reference point for sustainable finance.
- **Ireland** has set a vision to establish itself as a premier sustainable finance centre by 2025, highlighting its commitment to being at the forefront of sustainable financial practices.
- In collaboration with the Italian Ministry of Economy and Finance and inspired by the outcomes of the G20 and COP26, **Italy**'s vision is to leverage this global momentum to become a frontrunner in sustainable finance among EU Member States. This vision reflects Italy's ambition to set an example in the sustainable finance

[36] This was specified under Article 173.4 and 173.6 of the 2015 Energy and Transition Law.
[37] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0097.
[38] See https://eur-lex.europa.eu/resource.html?uri=cellar:9f5e7e95-df06-11eb-895a-01aa75ed71a1.0001.02/DOC_1&format=PDF.
[39] Austria’s NECP (2019): https://energy.ec.europa.eu/system/files/2019-03/ec_courtesy_translation_at_necp_0.pdf.

domain. In Italy, a two-pronged approach inspired by the UK was adopted for structuring recommendations based on greening finance and financing green initiatives[40].

- **Lithuania**'s Action Plan is designed with a dual focus: firstly, to encourage the funding of sustainable projects by private financial market entities, and secondly, to establish a sustainable finance ecosystem that facilitates effective interactions between private financial market players and public bodies. This plan illustrates Lithuania's comprehensive approach to fostering a sustainable finance environment.
- The **German** SFS aims to establish Germany as a leading centre for sustainable finance through promoting sustainable investment and through integrating sustainability principles into the broader financial system.
- The **Dutch** SFS has a comprehensive objective of positioning the Netherlands as a prominent and influential centre for sustainable finance. The strategy aims to achieve this by promoting sustainable investments and by seamlessly integrating sustainability principles across the entire financial system.

The reviewed roadmaps and action plans exhibit a range of structures and content. Notably, Ireland, Germany, Lithuania, and the Netherlands have adopted a particularly structured methodology in their national roadmaps. They have organized their strategies around a series of distinct pillars, which are clearly depicted in Box 2 below. This structured approach aids in presenting their sustainable finance strategies in a coherent and easily navigable format, facilitating better understanding and implementation.

[40] (1) Greening Finance: This focuses on integrating climate and environmental considerations into the financial system's core operations, emphasizing both current and future financial risks and opportunities; (2) Financing Green Initiatives: This target mobilizing private finance for clean and resilient growth, aligning with Italian policy goals. It prioritizes investors in the Italian ecosystem most willing to fund sustainable projects and covers projects from innovation to market deployment, using various financial tools and products. Additionally, the Italian SFAP underscored two foundational elements vital for the success of these strategies: enhancing sustainable financial literacy and establishing an ambitious, coherent policy framework.

Box 2: Overview of Key Pillars of Sustainable Finance Approaches in Ireland, Germany, Lithuania and the Netherlands

The Irish SFR is structured around five pillars and 18 recommendations[41]:

Developing talent	Industry readiness	Leveraging digital	Enabling environment	Promotion and communication

The German SFS is guided by eight pillars with 26 specific measures[42]:

Strengthen sustainable finance at the global and European level	Improving transparency	Strengthening risk management and supervision	Improving and implementing impact assessment methods
Financing transformation	The German government in capital markets	Strengthening institutions, generating, and sharing knowledge	Creating efficient structures for implementing the Sustainable Finance Strategy

The "Lithuanian strategy and action plan on sustainable finance" contains 13 recommendations structured around four headings:

Establishment of a body coordinating sustainable finance ecosystem	Promote public sector sustainable finance	Promote private sector sustainable finance	Development of sustainable finance competence

The Dutch Sustainable Finance Strategy[43] has five key objectives and 14 actions until 2025:

Supervision, financial stability and resolution	Monetary tasks and payment system	Economic research and advice	Robust sustainability data and statistics

Furthermore, Table 2 below offers a detailed comparison of how the reviewed documents address the various types of PaMs identified by **the Coalition of Finance Ministers for Climate Action. It is noteworthy that the Czech Republic, in contrast to the seven countries scrutinized in this report, is not part of this coalition.**

[41] See https://www.sustainablefinance.ie/wp-content/uploads/2021/10/Irish-SusFinance-Roadmap-FINAL-FINAL-OCTOBER-2021.pdf.
[42] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[43] See https://www.dnb.nl/media/cpgjlbtr/76642-dnb-sustainable-fin_en_web.pdf.

Table 2: **Coverage of the Analysed Roadmaps and Initiatives (ICF[44] and PwC Assessment)**

Type	Austria[45]	France[46]	Ireland[47]	Italy[48]	Lithuania[49]	Germany[50]	Netherlands[51][52][53]
Reporting & Disclosure		■	■	■	■	■	■
Institutional Responsibility		■		■		■	■
Capital Supply & Allocation	■		■	■	■	■	■
Risk Management	■		■	■		■	■
Capacity Building	■	■	■	■	■	■	■
International Standards		■	■	■	■	■	■
Product & Market Innovation	■	■	■	■	■	■	■
Regulation						■	■
Data Collection		■	■	■	■	■	■
Formal Education	■			■			■
Research	■	■	■	■	■	■	■
Fiscal incentives				■		■	■

Source: own compilations: ICF (Austria, France, Ireland, Italy, Lithuania), PwC (Germany, Netherlands)

[44] ICF is a global consulting and technology services company.
[45] Assessment based on: https://www.bmk.gv.at/en/green-finance/finances/sustainable-future.html.
[46] Assessment based on: https://www.vie-publique.fr/sites/default/files/rapport/pdf/284351.pdf & https://www.unpri.org/download?ac=5648.
[47] Assessment based on: https://www.sustainablefinance.ie/wp-content/uploads/2021/10/Irish-SusFinance-Roadmap-FINALFINAL-OCTOBER-2021.pdf.
[48] 8 Assessment based on: https://wedocs.unep.org/bitstream/handle/20.500.11822/16801/Financing_the_Future_EN.pdf?sequence=1&%3BisAllowed = and insights from the DG REFORM project supporting the design of Italy Sustainable Finance Action Plan completed by ICF.
[49] Assessment based on: https://finmin.lrv.lt/uploads/finmin/documents/files/Strategy_and_Action%20Plan_2021-12- 30_small.PDF
[50] Assessment based on: https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[51] See https://www.dnb.nl/en/green-economy/sustainable-finance-platform/#:~:text=.
[52] See https://www.oecd-ilibrary.org/sites/e32461f6-en/index.html?itemId=/content/component/e32461f6-en.
[53] See https://www.dnb.nl/media/cpgjlbtr/76642-dnb-sustainable-fin_en_web.pdf.

Ministries of Finance and national and central banks play a pivotal role in developing and implementing SFRs and SFAPs across different EU Member States. It is crucial for these institutions to possess the necessary skills and capabilities and to maintain strong collaboration with other relevant ministries. The adequate, competent, and skilled capacities or staffing are also an important precondition to successful implementation and acceptance of the sustainable finance agenda. In the seven Member States analysed, the finance ministries lead the sustainable finance agenda in France, Ireland, Lithuania, Germany, and Italy, with Italy showing an evolution in leadership from the Ministry of Environment (2016) to the Ministry of Finance (2020-21). In Austria, the Ministry of Climate Action and the Ministry of Finance jointly handle this agenda. In the Netherlands the strategy was prepared by the Dutch National Bank and executed by the Government.

Given the unique position of finance ministries in overseeing a country's economy and public policy, as emphasized by the Coalition of Finance Ministers for Climate Action[54], **equipping them with the right expertise, such as in climate science, finance, and policy, is essential**. Upskilling existing staff and hiring new experts in specialized areas are critical steps. The UK's Green Finance Strategy is an example of this, offering foundational courses on green finance to government officials and organizing related conferences[55].

Additionally, **inter-ministerial coordination is vital to avoid task duplication, bridge policy gaps, and ensure comprehensive sectoral buy-in**. Clear delineation of responsibilities and inclusion of thematic ministries, like those of Climate Action or Environment, is necessary for a cohesive approach. However, this clear division of responsibilities hinges on ensuring sufficient staffing across all involved departments. Germany's SFS, for instance, is a result of joint efforts of the Federal Ministry of Finance, Federal Ministry for the Environment, Nature Conversation and Nuclear Safety, and the Federal Ministry for Economic Affairs and Energy. Similarly, at the end of 2022 the Italian Ministry of Economy and Finance promoted the establishment of a Sustainable Finance Platform[56], involving the Ministry of the Environment and Energy Security, the Bank of Italy, the National Commission for Companies, and the Stock Exchange (CONSOB), the Institute for Insurance Supervision (IVASS) and the Commission for the Supervision of Pension Funds (COVIP). This collaborative approach harnesses expertise across agencies, facilitating a more effective and integrated sustainable finance framework.

The variability in sustainable finance strategies among measured EU Member States, despite a strong overarching EU framework, presents a complex landscape that requires careful navigation. This complexity is particularly pronounced in **the Czech Republic, given its carbon-intensive economy, underscoring the urgency for a tailored national sustainable finance roadmap. The absence of such comprehensive national plans poses significant challenges for institutions, especially in a context where the Czech economy's reliance on carbon-intensive industries demands a strategic shift towards sustainability. While the structures of sustainable finance initiatives differ, their shared sustainability objectives provide the Czech Republic with flexibility in tailoring its approach. The pivotal role of Ministries of Finance in shaping these strategies also underscores the importance of the Czech MoF being well-equipped and promoting collaboration with other ministries.** This collaborative approach is essential to ensure the transition of the Czech economy to a more sustainable model, aligning with both national priorities and EU-wide sustainability goals.

[54] See https://www.financeministersforclimate.org/sites/cape/files/inline-files/Full%20Draft%20-%20Strengthening%20the%20Role%20of%20MoF%20in%20Driving%20Climate%20Action%201.pdf.
[55] See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820284/190716_BEIS_Green_Finance_Strategy_Accessible_Final.pdf.
[56] See https://www.dt.mef.gov.it/en/attivita_istituzionali/sistema_bancario_finanziario/finanza_sostenibile/Tavolo_finanza_sostenibile/index.html.

4.2 Non-financial Reporting, Disclosure & Data Collection

(Polish Good Practice Report, page 33 et seq.)

General Trends & Good Practices

- **Increasing Emphasis on ESG Reporting in the Financial Sector**: The financial industry widely acknowledges the significance of reporting and disclosing ESG risks and impacts. This consensus has made ESG reporting one of the most universally adopted recommendations in Sustainable Finance Reports across various stakeholders within the finance sector.
- **Prevalence and Challenges of the TCFD Framework**: The Task Force on Climate-related Financial Disclosures (TCFD) framework stands out as a commonly used guideline for sustainability reporting. However, the financial market faces challenges due to the plethora of sustainability reporting frameworks and standards available. This diversity often leads to confusion and results in inconsistent disclosure practices, which hampers the effectiveness and comparability of ESG reporting.
- **Struggle to Harmonize Global and National Standards**: Many countries find it challenging to strike a balance between adhering to global standards and developing national standards that are more attuned to their specific local contexts. This struggle often leads to the development of incomparable and inconsistent approaches to sustainability reporting, further complicating the global landscape of ESG disclosures.
- **Importance of the "Double Materiality Approach"**: Aligning with the European Union's stance on non-financial reporting, the adoption of a double materiality perspective is crucial. This approach not only helps in comprehending the full spectrum and impact of climate change on financial matters but also understands how financial aspects can influence environmental outcomes. Recognizing the bi-directional relationship between financial and environmental factors is key to achieving a comprehensive understanding of sustainability issues and fostering more effective ESG strategies.

ESG risks and impacts is unanimously acknowledged across all stakeholder groups within the financial industry. This consensus has led to the widespread adoption of such practices as key recommendations in numerous sustainability strategies and roadmaps within the sector.[57] Companies, both financial and non-financial, that are encompassed by the NFRD and the CSRD, are mandated to provide annual reports. These reports should cover two key areas: their eligibility under the EU Taxonomy and their alignment with it.

Under the CSRD, **all large companies and all listed companies except for certain listed micro-enterprises, will be required to adhere to sustainability reporting.** This includes non-capital-market-oriented large companies, which will now fall under the CSRD's scope. Furthermore, there will be a transitional period of three years for reporting obligations for small and medium-sized enterprises that are listed on a regulated market in the EU. **The CSRD is expected to be transposed into national law by Member States by July 6, 2024, with the new requirements applying from January 1, 2025, for the 2024 financial year**[58]. The following timeline outlines the specific deadlines and milestones for these disclosures.[59] More information on these aspects will be provided further in this document.

Sustainability reporting in the EU involves large companies in reporting *inter alia* on compliance of their economic activities with the EU Taxonomy for sustainable economic activities. The EU Taxonomy, introduced in 2020[60], is a comprehensive unified classification system categorizing economic activities based on their environmental sustainability and the so called minimum social safeguards. The reporting duties stem from Article 8 (Transparency of undertakings in non-financial statements) of Regulation (EU) 2020/852 of the European Parliament and of the Council of June 18, 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (EU Taxonomy Regulation) which requires the non-financial undertakings to disclose the proportion of their turnover derived from products or services associated with economic activities that qualify as environmentally sustainable under the EU Taxonomy and the proportion of their capital expenditure and the proportion of their operating expenditure related to assets or processes associated with economic activities that qualify as environmentally sustainable under the EU

[57] See https://www.sustainablefinance.ie/wp-content/uploads/2021/06/Best-Practice-Report_Final.pdf.
[58] See https://www.tpa-group.at/en/news-en/csrd-sustainability-reporting-austria/.
[59] See https://www.nordea.com/en/news/eu-taxonomy-reporting-a-first-look-at-the-challenges-and-best-practices.
[60] See https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en.

Taxonomy (EU Taxonomy KPIs) with the details being defined a delegated act[61]. Similar arrangements are set forth for financial enterprises in the EU Sustainable Finance Disclosure Regulation (SFDR)[62] and its subsequent Regulatory Technical Standards[63].

Table 3: EU Taxonomy Implementation Timeline

Reporting	Jan 2022	Jan 2023	Jan 2024	Jan 2025	Jan 2026
Non-financials	Eligibility under climate change mitigation and adaptation objectives.	Alignment on adaptation and mitigation objectives.	Eligibility under remaining four objectives[64]	Alignment on all six environmental objectives.	
Financials	Eligibility under climate change mitigation and adaptation objectives			Eligibility under the remaining four objectives	Alignment on all six environmental objectives.

The TCFD standard[65] introduced by the TCFD Recommendations in June 2017 has been a prevalent and guiding framework for a long time. In November 2023 concurrent with the release of its 2023 status report on October 12, 2023, the TCFD has fulfilled its remit and disbanded. The Financial Stability Board of G20 asked the International Financial Reporting Standards (IFRS) Foundation[66] to take over the monitoring of the progress of companies’ climate-related disclosures. In parallel to TCFD, a plethora of sustainability reporting standards, including the Value Reporting Foundation (VRF), Global Reporting Initiative (GRI), widely used to date by EU non-financial corporates for their sustainability disclosures, Carbon Disclosure Project (CDP), and Climate Disclosure Standard Board (CDSB), leads to market confusion and inconsistent disclosures[67]. Despite the TCFD's growing popularity, endorsed by numerous companies and central banks across nations like Austria, France, Ireland, Netherlands, Germany, Italy, and Lithuania, the multiplicity of frameworks has muddled the reporting landscape for a long time. The introduction of agnostic (horizontal and thematic) ESRS on July 31, 2023[68] marked not only the milestone in the transition to a sustainable EU economy, but also the final integration of the TCFD subject-matter in the mandatory sustainability reporting standards in the EU and rendered the proxy use of TCFD in the internal market redundant[69].

In response to the non-financial reporting dichotomy on global markets, **the International Sustainability Standards Board (ISSB) announced in 2021 its plan to establish standardized ESG reporting guidelines** with the dedicated role of the IFRS Foundation, complementing the work of the International Accounting Standards Board (IASB). This initiative, aimed at creating a global baseline for sustainability disclosures, marks a significant step towards harmonization, though its full implementation remains to be seen. Many remarkable achievements in harmonizing and aligning the existing major non-financial reporting standards[70] with the new

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[61] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R2178.
[62] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32019R2088.
[63] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2022.196.01.0001.01.ENG&toc=OJ%3AL%3A2022%3A196%3ATOC.
[64] See https://finance.ec.europa.eu/system/files/2023-06/taxonomy-regulation-delegated-act-2022-environmental_en_0.pdf. Only a selection of technical screening criteria was introduced by this Commission Delegated Regulation.
[65] See https://www.fsb-tcfd.org/.
[66] See https://www.ifrs.org/sustainability/tcfd/.
[67] See https://www.spglobal.com/esg/insights/new-global-sustainability-board-aims-to-cut-through-disclosure-confusion.
[68] See https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31_en.
[69] Based on the mandate of the European Commission, the European Financial Reporting Advisory Group (EFRAG) is currently working on two additional ESRS, namely Voluntary Standard for non-listed Small and medium-sized enterprises (VSME) ED approval and Standard for Listed Small and medium-sized enterprises (LSME ED). The deadline for introduction of 41 sector-specific standards have been postponed by two years, see https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4965.
[70] It concerns the following five organisations. International Integrated Reporting Council (IIRC), Carbon Disclosure Project (CDP), Climate Disclosure Standards Board (CDSB), Global Reporting Initiative (GRI) and Sustainability Accounting Standards Board (SASB).

global IFRS standards have been made and further work is set to take this task further in a coordinate and systemic manner[71].

Global standard-setting bodies, including the International Organisation of Securities Commissions (IOSCO) and the IFRS Foundation, have underscored the significance of materially disclosing ESG-related information and implementing standardized sustainability reporting. These efforts aim to facilitate sustainability goals through informed decision-making.[72] **Although detailed non-financial disclosures are not mandatory in most regions, several countries like France have adopted these practices, positioning themselves as leaders in the field.** This trend may stem from various factors, such as mitigating reputational risks, seizing a first-mover advantage, and gaining an edge over competitors. Countries with heightened sustainability awareness and public support are more likely to adopt stringent reporting standards. In this context, the Austrian Ecolabel's UZ 49 guidelines[73] for sustainable financial products play a crucial role. By demonstrating a 72%[74] reduction in emissions for Ecolabel-certified funds compared to traditional funds, these guidelines support efforts to lower carbon footprints and maintain ethical investment standards, offering a tailored local standard that fosters growth with a manageable regulatory burden[75].

Still, **countries around the world often grapple with the dual objectives of aligning with global non-financial reporting standards** while developing national standards that resonate with their specific local realities. This duality frequently results in a landscape marked by incomparable and inconsistent methodologies. In the EU context, the regulatory framework for non-financial reporting is mandated by the EU Directives, notably the NFRD and the CSRD as its major amendment. Each EU Member State enjoyed historically a certain measure of flexibility in adapting NFRD into their national context. Consequently, there has been a notable variation in the approaches adopted by different EU countries, with a corresponding diversity in the extent and nature of non-financial reporting obligations placed on companies[76].

- In **Italy**, the NFRD has been seamlessly incorporated into the national legislative framework through the Corporate Governance Code of Italian Listed Companies, established in Legislative Decree 254/2016. This comprehensive code mandates large companies, including listed companies, banks, and insurance firms, to provide detailed disclosures on environmental impacts, social and employee matters, adherence to human rights, and efforts to combat corruption and money laundering. Operating on a "comply-or-explain" basis, the code encourages companies to thoroughly assess and report risks that might jeopardize their long-term sustainability. It also recommends the formation of a board committee to oversee sustainability issues. Research on the Directive's impact in Italy reveals a marked increase in corporate commitment to sustainability, with affected companies rolling out sustainability reports and enhancing the accessibility of sustainability data on their websites. However, there is a tendency among many companies to fulfil only the minimum requirements, often avoiding the provision of additional voluntary information in their reports.
- In **Austria**, the implementation of the EU NFRD has been in place since 2017 based on the Sustainability and Diversity Improvement Act (NaDiVeG).
- In addition to implementing the NFRD, **Ireland** has taken proactive steps to promote compliance with the TCFD through targeted campaigns. With the backing of the public sector, 30 firms based in Ireland, encompassing a range of entities such as financial institutions, large corporations, and semi-state

[71] See https://www.integratedreporting.org/resource/statement-of-intent-to-work-together-towards-comprehensive-corporate-reporting/.
[72] See https://www.sustainablefinance.ie/wp-content/uploads/2021/06/Best-Practice-Report_Final.pdf.
[73] See https://www.umweltzeichen.at/file/Guideline/UZ%2049/Long/UZ49%20Sustainable%20Financial%20Products%202020_EN.pdf.
[74] See https://www.funds-europe.com/opinion/application-of-the-eu-ecolabel-to-retail-financial-products-is-the-market-ready.
[75] The European Parliament and Council announced on 5 December 2023 that they have reached a provisional agreement on proposed regulations (initially proposed in March 2022) for a new "Eco-design" framework to establish sustainability requirements for nearly all products across the EU, and to improve the sustainability profile of a wide category of products, including making them more environmentally friendly, circular, and energy-efficient through their lifecycle, by replacing the existing 2009 Eco-design directive, which was limited to energy-related products. On the same day, the European Supervisory Authorities (ESAs) announced the publication of their Final Report amending the draft Regulatory Technical Standards (RTS), completing their review of key disclosure rules for financial products under the Sustainable Finance Disclosure Regulation (SFDR), with proposals for new mandatory reporting on social factors such as exposure to tobacco production and inadequate wages, as well as new financial product disclosure of greenhouse gas (GHG) emission reduction targets.
[76] This is likely to change with the transposition of CSRD by mid-2024 which is more accurate and granular and in connection with the ESRS provides less discretion for Member States.

organizations, have become official supporters of the TCFD. In 2023, the Central Bank of Ireland decided to disclose climate-related information under all four TCFD categories[77].

- **France** demonstrated exceptional foresight and leadership in sustainability reporting by establishing comprehensive requirements even before the EU's legislation came into effect. This proactive approach was exemplified with the integration of Article 173-Provision VI into the Energy Transition Law, enacted in 2015. This specific provision set a precedent by mandating detailed reporting on sustainability practices. The specifics of this law and its far-reaching implications for sustainability reporting in France are elaborated in greater detail in Box 3 below[78].
- **Germany** is actively and dynamically enhancing its non-financial reporting framework in line with the EU. Emphasizing the TCFD recommendations, Germany advocates for these standards at international forums like the G7 and G20. The German government provides support to the financial sector by setting a clear framework for sustainable investment. These include CO_2 pricing and, for example, the pilot program for introducing climate protection contracts based on the Carbon Contracts for Difference (CCfD) approach[79].
- In the **Netherlands**, the implementation of the CSRD is advancing with a draft bill proposing amendments to key Dutch laws, emphasizing assurance rules and CSRD applicability to listed companies. Furthermore, Dutch financial institutions are encouraged to incorporate sustainability risks into their overall risk profiles, with a focus on managing both physical and transitional risks. These efforts align with the requirements of the EU NFRD, reflecting a commitment to enhanced sustainability reporting and risk management in the financial sector.[80]

Box 3: Non-financial Reporting Requirements in France

The **2015 French Energy Transition Law** sets out a roadmap to mitigate climate change and diversify the energy mix and mandatory carbon disclosure requirements. The law requires institutional investors (Art 173-VI) and companies (Art 173-IV) to provide information on the inclusion of climate change and ESG factors into their strategies. Investors and companies shall report how investments could impact climate & ESG factors and how these factors could impact investments.

- Listed companies shall disclose in their annual report:
  1. Financial risks related to the effects of climate change.
  2. The measures adopted by the company to reduce them.
  3. The consequences of climate change on the company’s activities and of the use of goods and services it produces.
- Institutional investors shall disclose in their annual report:
  1. Information on how ESG criteria are considered in their investment decisions.
  2. How their policies align with the national strategy for energy and ecological transition.
- The implementation of the Energy Transition Law is flexible to allow stakeholders to determine the most appropriate reporting methodologies:
- *Reporting on the integration of ESG criteria*: consideration of ESG issues in investment policy and risk management; list and percentage share of funds that integrate ESG criteria; methodology used; results of the analysis and actions taken.
- *Reporting on the integration of climate change-related risks*: physical risks and transition risks exposure; *contribution* to international target and to the objectives of the French Low Carbon Strategy.

[77] See https://www.centralbank.ie/docs/default-source/monetary-policy/management-of-investment-assets/climate-related-financial-disclosures-report.pdf?sfvrsn=e6df991d_6.
[78] See https://www.legifrance.gouv.fr/loda/id/JORFTEXT000031044385/.
[79] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[80] https://www.dnb.nl/en/green-economy/sustainable-finance-platform/

- *Reporting on the alignment of voluntary decarbonisation targets with national and international goals*: targets set by investors to assess the contribution to achieving the national and global climate targets, the alignment with EU objectives and carbon budgets set by the national Low Carbon Strategy; and actions to achieve these targets (changes in investment policy, divestment, and engagement).

The **2019 Law on Climate and Energy** includes an update on requirements on non- financial reporting by market players[81]. According to the Implementing Decree under Article 29, effective from 2022, all financial institutions shall disclose sustainability-related information under the concept of double materiality, regarding the inclusion of ESG criteria in investment policies and the means implemented to contribute to the energy and ecological transition[82].

Key additions to the non-financial reporting exercise are:

- *Biodiversity requirements*: provisions on the consideration of biodiversity risks.
- *Extension of the scope*: new actors and activities are concerned, inclusion of portfolio management and investment activities of banks, new provisions for credit institutions and investment firms.
- *Investment strategies consistent with long-term climate change objectives (minimum criteria for the alignment strategy)*: targets set (every five years), methodologies used, quantification of results, follow-up actions of the strategy.
- *Investment strategies aligned with long-term biodiversity objectives*: contribution to biodiversity conservation and restoration, based on a biodiversity footprint indicator.
- *Information on the management of "sustainability" or ESG* risks: qualitative and quantitative assessment of the financial impact of the main ESG risks.
- *Continuous improvement plan on the consideration of ESG criteria*: continuous improvement approach, opportunities for improvement, corrective actions in the event of failure to achieve *the* objectives set.

The implementation of the CSRD and the ESRS being formulated by the European Financial Reporting Advisory Group (EFRAG) are set to provide a more defined framework for companies subject to CSRD requirements. This enhancement in clarity and structure is acknowledged in the analysed sustainability roadmaps. However, this development does not diminish the crucial role of national governments in augmenting and facilitating a good level of practices regarding sustainability reporting and disclosure, ultimately leading to increased transparency in their respective markets. To achieve this, various countries are adopting differing strategies and approaches:

- In **Lithuania**, the scope of companies impacted by the CSRD is relatively narrow, as only a handful of firms qualify as large under accounting standards. To broaden the reach of sustainability reporting, Lithuania's SFR proposes expanding the obligation to report non-financial information. This expansion would include entities seeking funding for sustainable projects from public sources, such as the Recovery and Resilience Facility (RRF) and other EU funds. The rationale behind this recommendation is that it would significantly enhance market transparency in Lithuania. Furthermore, it would ensure that pertinent non-financial information becomes more accessible to a wider array of market participants, fostering a more informed and responsible investment environment[83]. However, Lithuania is now working on broadening the scope of companies complying with the NFRD and the CSRD and developing respective criteria[84].
- In **Ireland**, the emphasis is put on building capacities and ensuring best practices by designing support programme including elements such as professional accredited capacity building activities; insight roundtables on EU Regulations; case studies; and deep dive horizon scanning research papers that outline the impact of new and emerging topics on Ireland's financial services ecosystem, for example, the

[81] See Loi énergie-climat et régulation des acteurs financiers: principales avancées du décret d'application de l'article 29 | Ministères Écologie Énergie Territoires (ecologie.gouv.fr)
[82] Publication of the implementing decree of Article 29 of the Energy-Climate Law on non-financial reporting by market players | Direction générale du Trésor (economie.gouv.fr)
[83] See https://finmin.lrv.lt/uploads/finmin/documents/files/Strategy_and_Action%20Plan_2021-12-30_small.PDF.
[84] Interview conducted by ICF

establishment of the Task Force on Nature-related Financial Disclosures (TNFD) and the development of an EU social taxonomy.

Each of the Member States Roadmap has developed strategies to facilitate access to disclosed data, encompassing both mandatory and voluntary disclosures. The primary aim of these initiatives is to heighten market transparency and enable the precise determination of the extent to which various assets are exposed to transition and physical risks. This comprehensive visibility is crucial for enabling both financial and non-financial institutions to more effectively manage risks related to climate change and environmental factors. Ideally, this data should be collated and made available on a centralized platform, ensuring ease of access and analysis. Illustrating this approach, four notable examples of such data management systems can be highlighted:

- **In Austria,** the launch of the OeKB ESG Data Hub in 2022 by Oesterreichische Kontrollbank AG (OeKB) marks a significant advancement in the transparent and efficient exchange of ESG data among companies, aiding in regulatory compliance. This Hub, providing free tools, is based on detailed ESG questionnaires aligned with the EU Taxonomy, UN SDGs, Science Based Targets initiative (SBTi), and GRI, and is tailored for different company sizes. Concurrently, Austrian stock-listed companies, especially those on the ATX prime market, are actively engaged in non-financial and sustainability reporting, employing a variety of formats including integrated reports, and are guided by a mix of ESG regulations, the Austrian Commercial Code, and EU laws like the Taxonomy Regulation[85].
- **In Germany,** the government, backed by the Federal Environment Agency, is contemplating the introduction of a "traffic light" system for investment products to steer investments towards sustainability. This initiative, slated for implementation in the absence of a similar European Commission initiative, is designed to offer investors straightforward, succinct information about the sustainability attributes of their investments. The proposed system is planned to be in harmony with existing regulations.[86]
- **In France**, the IMPACT platform was launched in 2020 for non-financial and financial companies to port their ESG data. The indicators available on the platform allow companies to familiarise themselves with the notion of ESG performance and to prepare for future regulatory changes. The platform allows both Small and medium-sized enterprises (SMEs) and larges companies to report transparent information with open access from the public.

Alongside these national efforts, European policymakers are actively working on establishing the European Single Access Point (ESAP), a cornerstone initiative of the Capital Markets Union (CMU). The primary goal of the ESAP is to provide a centralized single access point to a wide array of publicly available financial and sustainability-related information critical to financial services, capital markets, and sustainability. The ESAP will offer a single access point for public financial and sustainability-related information about EU companies and EU investment products. The package, approved by the European Parliament on November 9, 2023[87] consists of the Regulation establishing ESAP, the ESAP Omnibus Regulation, and the ESAP Omnibus Directive[88]. The Council still needs to adopt the files; the ESAP Directive and Regulations will then enter into force 20 days after their publication in the Official Journal and see a staggered rollout over three phases: phase 1 will start on July 1, 2026, phase 2 on January 1, 2028, and phase 3 on January 1, 2030.

In alignment with the EU's stance on non-financial reporting, adopting a double materiality approach is essential to comprehensively understand the multifaceted impacts of climate change on financial aspects and *vice versa*. The double materiality concept encompasses the evaluation of both risks and opportunities from financial and non-financial perspectives. This approach offers several key benefits, including a more holistic understanding of a company's sustainability impact and financial performance, aiding stakeholders in making more informed decisions and contributing to a more sustainable financial ecosystem.[89]

France stands out as one of the few countries that have mandated a double materiality approach for institutional investors, also integrating climate considerations into fund strategies. The adoption of this approach has been

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[85] See https://oekb-esgdatahub.com/uber-uns.html.
[86] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=7.
[87] See https://www.europarl.europa.eu/legislative-train/theme-an-economy-that-works-for-people/file-european-single-access-point.
[88] An Omnibus law amends numerous Directives or Regulations at once.
[89] See https://www2.deloitte.com/cn/en/pages/hot-topics/topics/climate-and-sustainability/dcca/thought-leadership/the-challenge-of- double-materiality.html.

limited in many countries due to a lack of awareness and technical capabilities for measuring impacts. To promote wider implementation, there is a pressing need for extensive capacity-building efforts. These should aim to educate policymakers, investors, and companies about the long-term advantages of the double materiality approach, ensuring a more sustainable and risk-aware financial ecosystem[90].

In **the Netherlands**, DNB has published a comprehensive supervisory approach[91] for managing climate and environmental risks, highlighting the concept of double materiality. This approach emphasizes that financial institutions not only face risks from climate change and environmental degradation but also contribute to these risks through their investments. DNB advocates for a thorough understanding of how climate and environmental risks impact the business environment and model, urging institutions to conduct detailed analyses and integrate these risks into their strategic investment policies and risk management cycles[92].

For a truly comprehensive assessment of risks, it is crucial for companies to gather non-financial data not only from their own operations but ideally from their value chains as well. This approach ensures a more objective understanding of a company’s exposure to climate risks (financial impact) and its sustainability impact. In this context, the European Securities and Market Authority (ESMA) has urged global standard setters to incorporate a double materiality perspective into the ISSB standards. This is particularly important as claims of greenwashing often blur the lines between creating enterprise value and impact materiality[93]. Moreover, ESMA is currently working on its two critical methodologies regarding “double materiality”[94] and “value chains”[95].

In 2023, PwC conducted an analysis on the implementation of the EU Taxonomy within financial and non-financial sectors[96], revealing insightful trends, namely: 63% of respondents affirmed that sustainability is a high priority in their company, indicating a significant shift towards environmental consciousness. Additionally, 48% of the companies have already commenced compliance reporting in alignment with the EU Taxonomy, demonstrating proactive adaptation to the new regulatory framework. About 46% anticipate an increase in staffing needs due to the reporting obligations, reflecting the growing complexity and resource requirements of sustainable reporting. Furthermore, 61% of companies with experience in implementing these measures are involving external service providers, highlighting a trend towards seeking external expertise in navigating the complexities of the EU Taxonomy. **Therefore, the response of both financial and non-financial sectors to the EU Taxonomy and non-financial reporting reveals a complex and varied landscape.** Financial institutions display a range of practices in disclosing EU Taxonomy KPIs, often lacking in transparency and standardization, which is echoed in the non-financial sector's struggle with data challenges and methodological clarity. The discrepancies in reporting, the selective adoption of mandatory templates, and the divergent approaches across industries underscore the ongoing challenges and adaptations required as companies navigate the evolving demands of sustainable reporting.

In conclusion the adoption and effective implementation of ESG reporting, particularly within the context of diverse international standards and the TCFD framework, is vital for aligning with global best practices and addressing specific local sustainability challenges. Additionally, the Czech Republic's alignment with the EU taxonomy for sustainable activities is essential. Furthermore, embracing the double materiality approach aligns the Czech Republic with EU policies and enhances its capability to assess

[90] See ttps://www2.deloitte.com/cn/en/pages/hot-topics/topics/climate-and-sustain https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FMeeting%20Documents%2F2302241032237237%2F03-02%20Materiality%20Assessment%20Implementation%20guidance%20clean%20SRB%20231025.pdf.ability/dcca/thought-leadership/the-challenge-of- double-materiality.htmlhttps://www2.deloitte.com/cn/en/pages/hot-topics/topics/climate-and-sustainability/dcca/thought-leadership/the-challenge-of-double-materiality.html

[91] See https://www.moodysanalytics.com/regulatory-news/mar-30-23-dnb-publishes-guide-on-climate-and-environmental-risk-management#:~:text=DNB%2C%20the%20central%20bank%20of,managing%20climate%20and%20environmental%20risks.

[92] See https://www.dnb.nl/en/sector-news/supervision-2023/dnb-publishes-supervisory-approach-for-climate-and-environmental-risk-management/#:~:text=,focal%20points%20and%20good%20practices.

[93] See https://greencentralbanking.com/2022/07/15/esma-calls-for-double-materiality-in-issb-standards/.

[94] See the draft Implementation guidance for the materiality assessment (IGMA) at

[95] See Implementation guidance for value chain (VCIG) at https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FMeeting%20Documents%2F2307280747599961%2F05-02%20VCIG%20SRB%20230823.pdf.

[96] See https://www.pwc.de/en/accounting-reporting/eu-taxonomy.html.

and report on both the environmental impact of financial activities and the financial implications of environmental changes.

4.3 Capital Supply & Allocation: Innovative Financial Products

(Polish Good Practice Report, page 43 et seq.)

Summary of General Trends & Good Practices

- **Capital Allocation for Sustainable Activities**: A key focus of Sustainable Finance Reviews is the development of policies and measures to channel capital into sustainable activities. This is achieved through a variety of initiatives aimed at increasing the supply of funds for environmentally and socially responsible projects.
- **Sovereign GSS Bonds Issuance Trends**: Countries included in this review have uniformly issued sovereign GSS bonds and plan to continue this trend. The volume of these issuances, however, varies significantly, with France being a notable leader in this domain.
- **Diversification of Government-Issued Bonds**: Traditionally, governments have favoured green bonds tied to specific expenditures. However, there is a growing interest in alternative forms such as sustainable bonds, with some attention also given to transition and sustainability-linked bonds.
- **Support for Corporate GSS Bond Markets**: Governments are actively working on strategies to enhance their corporate GSS bond markets. This involves designing and implementing supportive measures to facilitate market growth.
- **Leveraging Traditional Financial Instruments**: Traditional financial tools, like guarantees and loans, are being used by governments to attract private finance for sustainable activities. These efforts are crucial in supporting innovation throughout the sustainability sector.
- **Innovative Finance Products and Technology Utilization**: In addition to traditional methods, reviewed Member States are exploring innovative ways to mobilize private capital for sustainable activities. This includes leveraging technology to create new sustainable finance products and solutions.
- **Green municipalities**: There is growing recognition of the potential of incorporating municipalities into the development of a SFRs. Municipalities offer unique local insights and expertise, vital for addressing diverse regional sustainability needs.
- **Fostering a Green Fintech Ecosystem**: There is an emerging focus among multiple countries on developing a local green fintech ecosystem. This is seen as a pivotal step in supporting the transition to sustainable finance systems.

The central topic of the SFRs examined is the enhancement of capital flow towards sustainable activities. The PaMs adopted for this purpose vary, encompassing a wide range of financial products and support mechanisms. This analysis initially focuses on the role of governments in directly mobilizing private capital, either through the **issuance of GSS bonds or via alternative financial instruments.** It then shifts to exploring the measures implemented to indirectly mobilize private capital for financing sustainable activities.

A key finding is that all the countries covered in this roadmap have issued sovereign GSS bonds and plan to continue doing so. Such issuances are regarded as vital tools for fostering the development of green capital markets by governments. These bonds are heavily bought by international finance institutions such as European Investment Bank, and institutional investors including pension and investment funds. Recent academic research has identified several crucial aspects for ensuring the positive impact of GSS bond issuances on local markets. These include adhering to established and recognized standards, establishing sound and robust governance mechanisms (both internally and externally), and linking the use of proceeds to science-based, credible transition plans and market development goals. The approach to future SGB issuances, however, varies across different Member States.[97][98]

The **Irish** roadmap states for example that future issuance will be considered depending on market considerations, while the issuance of sovereign and non- sovereign GSS bond is at the core of the **Lithuanian** sustainable finance strategy and action plan, as detailed in Box 7 below. The latter is partly explained by the fact that, with less than EUR 1 bn of issuance to date, the Lithuanian GSS bond market is lagging compared to other European Member States.

France is a significant player with its market of EUR 52.5 bn of green bond issuance to date, it is one of the largest SGB issuers globally. Since 2020, the French government complemented its green bond approach with

[97] https://doi.org/10.1007/978-3-031-38692-3_3
[98] https://www.imf.org/-/media/Files/Publications/WP/2023/English/wpiea2023058-print-pdf.ashx

a green budgeting approach to systematically assess the impact of public expenditures on the environment. The first Green Budget was assessed in 2021 under the French Finance Bill and concluded that out of a total of EUR 574.2 bn in budgetary spending and tax expenditures, EUR 52.8 bn has an impact on the environment[99].

The **Netherlands** has emerged as a European leader in the green bond market, with its market size reaching EUR 122.9 billion by July 2023, a significant increase from 2020. Dutch companies and the government lead Europe in issuing green bonds relative to their total debt of Dutch companies and the government, with a total 6.0% debt share[100]. Non-financial corporations are particularly active, issuing 17.1% of their total debt as green bonds. The Dutch government has been proactive, issuing its first AAA-rated Sovereign Green Bond in 2019, attracting high demand and aiming for an eventual target of EUR 10 billion. This bond, along with others issued by major entities like Tennet and the Nederlandse Waterschapsbank NV, supports various sustainable projects[101].

Finally, **the Italian case** is interesting as the 2016 sustainable finance strategy identified the use of SGB as one of the options to support the national green bond market. This materialised in the following years as in early 2021 Italy entered the sovereign bonds market with an EUR 8.5 bn issuance, the largest sovereign green bond issuance at the time. In 2022, Italy experienced strong demand for its new green bond issuance, despite market turbulence due to expectations of a significant rate hike from the European Central Bank and a general election. The bond, set to mature in April 2035, aimed to raise EUR six billion, attracting investor interest exceeding EUR 40 billion. Following up in 2023, Italy witnessed even greater demand, over EUR 52.9 billion, for its eight-year green bond dedicated to funding environmentally beneficial projects. This demand was notably double that of Italy's regular bond sales in the first two months of 2023. The bond, Italy's third green issuance, set to mature on October 30, 2031, was priced with a yield of 4.056%[102].The spread was set 8 basis points above the yield of the 0.60% August 2031 conventional BTP (Buoni del Tesoro Poliennali)[103].

Germany's pioneering approach to sustainable finance, particularly since 2020, is notably marked by the introduction of Green German Federal securities, commonly referred to as **green twin bonds**. These bonds represent a significant innovation in the financial markets, mirroring conventional federal securities in key aspects like maturity and coupon rates. **A central feature of these green bonds is their swap mechanism, offering investors the flexibility to swap their holdings with a conventional German government bond with the same maturity and coupon whenever they want.** This flexibility plays a crucial role in maintaining the stability of financial markets.

Key Aspects of the Green Twin Bonds Swap Mechanism:

1. **Flexibility for Investors**: The option to swap between conventional and green bonds allows investors to choose between impact investing and traditional investment routes, based on their preference at any given time.
2. **Price Discovery**: The swapping feature aids in price discovery, enabling a comparison between the yields of green bonds and conventional bonds. This comparison is crucial for understanding the premium investors are willing to pay for sustainable investments.
3. **Liquidity and Market Depth**: Offering a swapping option potentially enhances the liquidity and market depth of sustainability bonds, as it enables investors to move in and out of these bonds more freely.
4. **Risk Management**: For investors concerned about the risk profiles of sustainability bonds, the swap mechanism provides a hedge, allowing them to switch to conventional bonds if they perceive increased risks in the green bond market.
5. **Signalling Mechanism**: The swapping trend acts as a signal regarding market perceptions of sustainability issues. A higher demand for sustainability bonds over conventional bonds might indicate a shift towards responsible investing.

[99] The "Green Budget" is an environmental impact assessment of the budget. It has four defining characteristics: assessment of the "green" impact of all State budget expenditures, covers tax expenditures, reflects concerns related to climate change and other environmental issues (e.g., biodiversity), rates both expenditures favourable to the environment and expenditures with a negative impact.
[100] See https://www.dnb.nl/en/statistical-news/snr-2023/the-netherlands-european-leader-in-green-bonds/.
[101] Dutch State Treasury Agency, Green Bond Framework, 2019
[102] See https://www.reuters.com/markets/europe/italy-cyprus-launch-esg-debt-sales-after-market-volatility-2023-04-04/.
[103] See https://www.morningstar.com/news/dow-jones/202304045628/italy-expands-green-bond-curve-with-eur10-billion-issue-of-october-2031-green-btp-update.

6. **Benchmarking**: The swap mechanism facilitates effective benchmarking of sustainability bonds against their conventional counterparts, aiding in the assessment of performance and impact of sustainable investments.

This concept, designed to maintain liquidity in German government bonds, signifies a critical development in sustainable finance within Europe's largest economy. The green twin bonds, with a smaller issue volume compared to conventional bonds, underscore environmental sustainability. Their initial launch attracted substantial interest, demonstrated by orders totalling EUR 33 billion and a final book size of EUR 6.5 billion. This robust demand underscores a growing global interest in environmentally focused financial instruments[104]. In addition, Green Bonds are issued in Germany in accordance with the Green Bond Principles (GBP) and are intended to finance federal expenditure contributing to the transition to a low-carbon, sustainable and resource-efficient economy. The proceeds of German government bonds are channelled into five areas. An overview of the use of these resources by eligible area is given in the Table 4 bellow:

Table 4: The German green bond allocation by sector (EUR million)

Sector	2019	2020	2021	2022
Transport	7,125	7,387	8,344	7,186
International Cooperation	2,982	3,278	3,701	3,187
Research and Development	0,625	1,085	1,360	2,296
Energy and Industry	1,199	1,093	2,665	1,171
Agriculture and Forestry	381	564	767	660
Total	**12,312**	**13,407**	**16,837**	**14,500**

Source: Ministry of Finance, Green bond allocation report (2022)

Germany's innovative twin bonds issuance pairs conventional and green bonds, each with identical terms like maturity and coupon rates. This approach channels funds towards sustainable projects through the green bond, while maintaining traditional financing with the conventional bond as explored in a case study presented in Box 5 bellow.

Box 5: German Innovative Approach to Twin Bonds Issuance

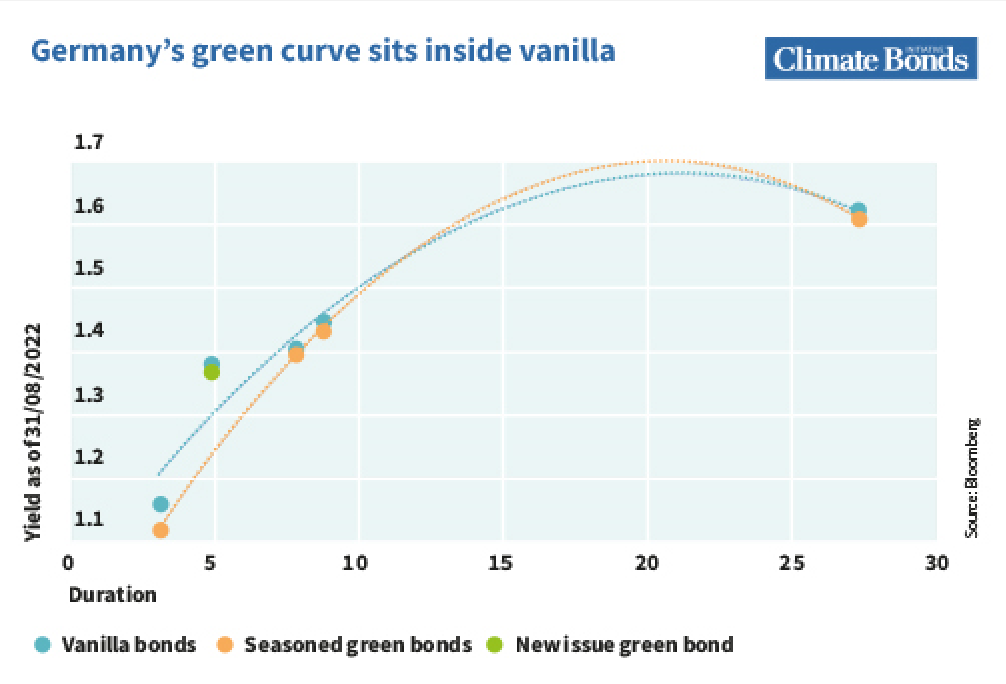
In September 2021, the Federal Republic of Germany issued its fourth sovereign green 10-year bond (Bund) with an initial volume of EUR 3.5 billion. It has issued a total of 4 bonds to date. The chart on the right shows that the yield of green bonds traded on the secondary market (orange) is lower for investors than the yield of standard bonds with the same maturity, as investors are willing to pay a higher price for the same yield, even if it reduces their profit for the same coupon.

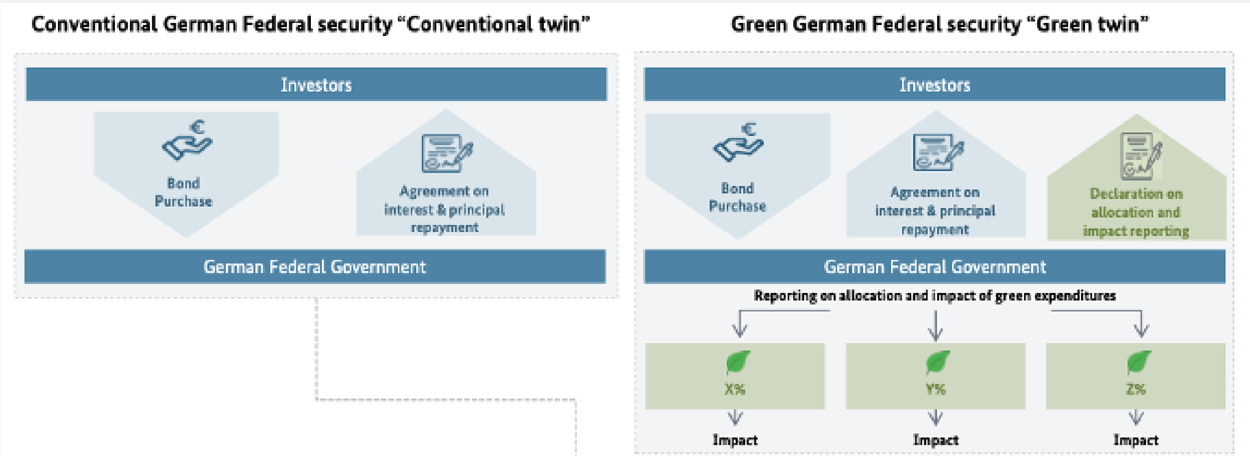
Bond issues are simultaneously issued as conventional on the one hand and green on the other, the so-called Twin Bond Concept. This ensures a comparison of the attractiveness of the two types of bonds and full price transparency is realised, enabling better performance of the green twin bond. These bonds were used for example to finance the railway project Modernisation of the Ulm-Lindau railway line with an investment of EUR 370 million[105].

Evolution of the difference between the green premium between conventional bonds and green bonds in Germany (2022):

[104] Seehttps://gsh.cib.natixis.com/our-center-of-expertise/articles/german-sovereign-innovates-with-its-bund-s-inaugural-green-twins#:~:text=The%20twin%20bond%20concept%20is,and%20coupon%20whenever%20they%20want.
[105] See: www.deutsche-finanzagentur.de/bundeswertpapiere/bundeswertpapierarten/gruenebundeswertpapiere/zwillingskonzept.

Twin Bond Concept:[106]





Main terms (Green) Bobl Oct 2027

		Conventional twin	Green twin
Identical to both twins	Maturity segment	5y	
	Coupon	1.3%	
	Interest dates	Annually	
	Maturity	15 October 2027	
	Future-Contracts	Deliverable	
Different for each twin	Outstanding size	€ 12 bn (after tap in August)	to be determined in the syndicate
	Issuance date	28 June 2022	September 2022
	ISIN	DE0001141869	DE0001030740

Source: KfW

Governments are also designing and implementing measures to support the development of their corporate GSS bond markets. Four examples of such measures include:

[106] See: https://www.deutsche-finanzagentur.de/bundeswertpapiere/bundeswertpapierarten/gruenebundeswertpapiere/zwillingskonzept

- The support to the (green) minibond market in **Italy**: minibonds are medium-long term debt instruments for SMEs intended to development plans, such as extraordinary investment transactions, and/or refinancing. They were introduced in Italy in 2012 with the objective to diversify the financing of SMEs and unlisted companies and ease their access to capital markets. Since 2012, more than 1,200 minibond issuances were identified by the Italian Observatory of Minibond representing a total of EUR 8.07 bn. Given this success, Borsa Italiana created a professional segment of the ExtraMOT[107] market (called ExtraMOT PRO) where the relevant debt securities can be traded. A recent study estimated the potential of the green minibond market to be approximately EUR 7.2 bn. Measures to support the growth of that market segment are now being considered by the Italian Ministry of Economy and Finance. In 2022, there was a surge in the issuance of green minibonds and sustainability-linked ones. These types of securities are liked by investors and give visibility to companies, allowing them to obtain credits spendable with respect to their ESG scoring. Last year, 18.5% of the collection is associated with these specific types of minibonds[108]. See Box 6 for more details.

Box 6: Italian Minibonds

Italian minibonds[109],[110] are a financial tool for SMEs to raise funds through bond issuance. Here is a summary of how they work:

- **Definition and Scope:** Minibonds are medium-long term bond issues with a total value of less than EUR 50 million. They are intended for non-listed companies, excluding banks and micro-enterprises. This allows SMEs to raise funds quickly and easily from qualified investors without resorting to bank loans.
- **Eligibility Criteria:** According to the 2013 Destinazione Italia Decree, minibonds can only be issued by companies classified as SMEs, with a turnover exceeding EUR 2 million and at least 10 employees.
- **Investor Profile:** Subscriptions to minibonds are reserved for professional institutional investors and other qualified entities, including banks, investment companies, asset management companies, and insurance companies. This form of investment is attractive to financial institutions due to higher and less volatile returns compared to other financial tools.
- **Advantages for SMEs:** Minibonds offer several benefits, such as stable loan terms, diversified funding sources, and various repayment options (bullet, amortizing, or with a grace period). They also have a longer maturity period compared to average bank loans and do not affect the Central Risk Register.
- **Emission Process and Contributors:** The issuance process involves multiple parties. A company first consults an advisor for strategic planning and analysis. Legal advisors ensure compliance with contracts and regulations. Arrangers manage the placement of bonds and find investors. Credit Rating Agencies provide independent assessments of the issuing company's health.
- **Basket Bonds Initiative:** Basket bonds are portfolios of minibond emissions from a group of companies with common themes or geographic ties. Companies can apply to be part of a basket bond operation, and an arranger selects eligible enterprises to form a bond pool. Notable initiatives include Basket Bond Loan and Basket Bond Mezzogiorno.
- **Role of Credit Rating Agencies:** Agencies play a crucial role in evaluating SMEs for minibond issuance. They provide reliable credit ratings, facilitating access to capital for companies and ensuring investor safety.
- **Use in Green Financing**: Minibonds have emerged as a valuable tool for green financing. By issuing green minibonds, SMEs can specifically finance projects that have a positive environmental impact, such as renewable energy, energy efficiency improvements, sustainable waste management, and green infrastructure projects. Currently, they are mostly used in the Italian manufacturing industry followed by construction and real estate.

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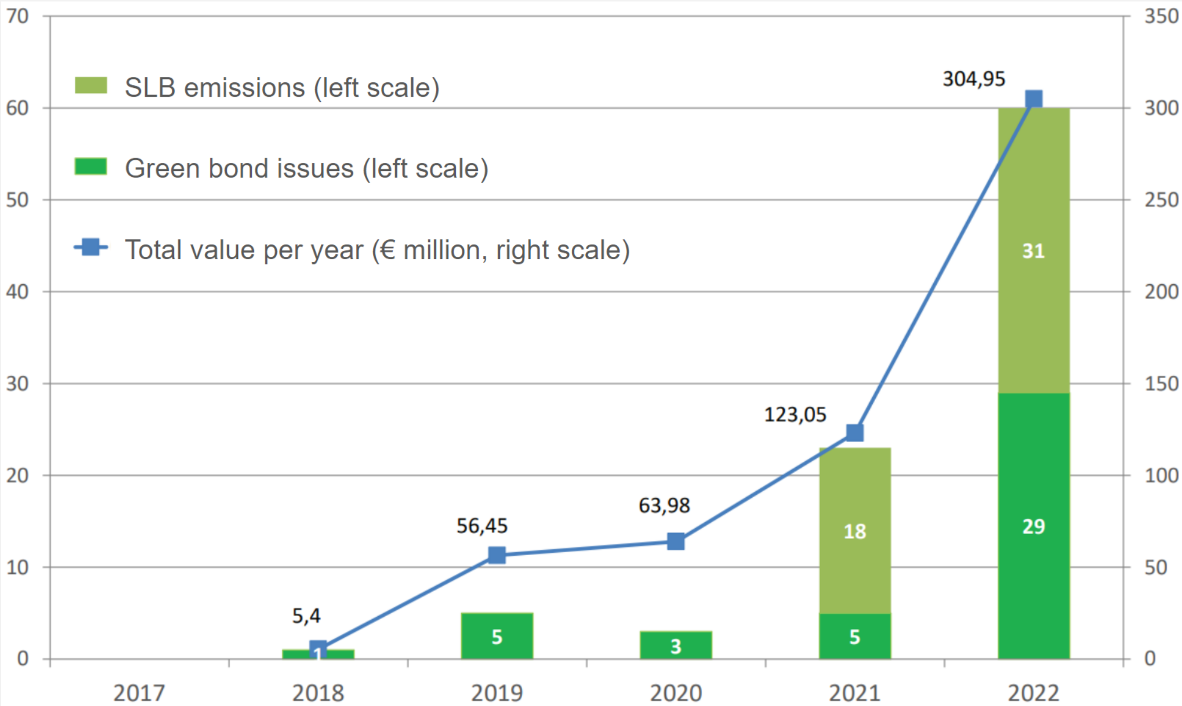
[107] See https://www.osservatoriefi.it/efi/osservatorio-minibond/.
[108] See https://www.osservatoriefi.it/efi/osservatorio-minibond/.
[109] See https://www.modefinance.com/en/company/blog/minibond-a-profitable-loan-facility-for-both-italian-enterprises-and-investors.
[110] See https://www.osservatoriefi.it/efi/wp-content/uploads/2022/03/reportminibond2022-2.pdf.

Figure 1: The Flow of Green and Sustainability-linked Minibonds (SLB) on the Italian Market (Issues under EUR 50 million): Number and Annual Value in EUR Million[111]



Source: Osservatori Entrepreneurship Finance & Innovation (2023)

- As of July 2023, non-financial corporations in **the Netherlands**, which produce goods and non-financial services, are leading issuers of green bonds, accounting for 17.1% (EUR 31 billion) of their total outstanding debt. This sector surpasses financial holding companies and banks, which hold 5.8% (EUR 44 billion) and 5.0% (EUR 27 billion) in green bonds, respectively. The Dutch central government also contributes to this trend, with 3.2% of its debt financed through green capital, represented by a single bond valued at just over EUR 11 billion. Notably, within non-financial corporations, TenneT, a company wholly owned by the State of the Netherlands, stands out with an outstanding green debt of EUR 16.9 billion. Among banks, ABN AMRO Bank and Nederlandse Waterschapsbank have the most significant green debt in absolute terms, at EUR 9.7 billion and EUR 5.3 billion, respectively[112]. In addition, the Dutch government had a very strong market feedback in June 2022 when it issued an additional EUR 4.98 billion of green bonds through the Dutch State Treasury Agency (DSTA), an agency of the Dutch Ministry of Finance, and the oversubscription was 2.8 times higher as shown in Table 5.

Table 5: Dutch State Treasury Agency's Green Bond Issuance Overview

Issuer	**Dutch State Treasury Agency (DSTA)**
Rating	**Aaa/AAA/AAA**
Issue size	**EUR 4.98 bn** (130 bn Kč) – it was an additional issue (reopening) **EUR 15.7 bn** (408 bn Kč) **–** total funds raised for green investments
Demand to supply ratio	**2.8x higher** investor demand

[111] See https://www.osservatoriefi.it/efi/download/9-report-italiano-sui-minibond/.
[112] See https://www.dnb.nl/en/statistical-news/snr-2023/the-netherlands-european-leader-in-green-bonds/.

Coupon	0.50 %
Maturity	**18 years** (January 2040)
Date of issue	June 16, 2022 (ISIN NL0013552060, Euronext, AMS)
investor	45% investment funds, 24% pension funds and insurance companies, 12% hedge funds and 12% banks

Source: DeNederlandsche Bank (2023)

- The **Lithuanian** Strategy and Action Plan includes multiple recommendations aiming to support the growth of its GSS bond market. They are presented in Box 7 below.

Box 7: Lithuania Plans to Strongly Support Development of its Sovereign and Non-sovereign GSS Bond Market

The Lithuanian Strategy and Action Plan includes multiple recommendations aiming to support the growth of its GSS bond market, including:

- **Establishing a Public Sustainable Bond Issue Plan**: Lithuania plans to follow a similar approach to the German experience with the issuance of twin bonds (i.e., issuances of green and non-green government bonds with identical economic terms). The objective of the plan is to annually increase the percentages for sustainable state borrowing through its bond issuance programme. In parallel Lithuania will reinforce its process to identify their green and sustainable eligible expenditures.
- **Establish State Owned Entities (SOEs) Sustainable Bond Issue Plan**: Recognising that the SOEs' appetite for GSS bonds is limited, the action plan wishes to incentivise these players. This will be done by setting a clear annually increasing target to achieve at least 50% borrowing by 2030 by means of sustainable bond issuance listed in Lithuania and other sustainable debt instruments. This is perceived as a key tool to support the development of the Lithuanian capital market by providing local investment opportunities to institutional investors such as pension funds.
- **Establish a Legal Framework for Sustainable Project Bonds**: The lack of long-term bank funding is one of the barriers limited the development of Private Finance Initiative (PFI)[113], one solution to overcome this barrier is to facilitate the use of sustainable project bonds. Although the Lithuanian Law does not prohibit these bonds, it does not provide sufficient clarity to facilitate their developments.

Lithuania is not the only country focusing on SOE bond issuance and other green financial products but is the only country specifically mentioning them in the Action Plan. In the Netherlands, SOE's green bond issuance stood at €31 billion as of July 2023, representing 17.1% of their total debt. Within this sector, TenneT, wholly owned by the Dutch state, and the Royal Schiphol Group N.V. are prominent examples[114]. In Italy, the state-owned enterprise Ferrovie dello Stato Italiane S.p.A. (FS) has issued a green bond. This issuance, amounting to €500 million, was for the purpose of purchasing over 100 new electric trains for the Italian regions of Campania and Lazio[115]. Railways, trains, and transportation were also financed through green bonds in the case of German Deutsche Bahn[116] and Austrian Österreichische Bundesbahnen-Holding AG (ÖBB)[117]. In France, Électricité de France S.A. (EDF), a multinational electric utility company owned by the French state, utilizes green bonds to finance a variety of environmentally beneficial projects. These bonds have supported projects in areas like renewable energy (wind and hydroelectric projects) and biodiversity. The funds raised through these bonds

[113] See https://www.investopedia.com/terms/p/privatefinanceinitiative.asp.
[114] See: https://www.dnb.nl/en/statistical-news/snr-2023/the-netherlands-european-leader-in-green-bonds/.
[115] See: https://www.eib.org/en/press/all/2023-501-eib-and-fs-italiane-eur500-million-green-bond-for-the-purchase-of-over-100-regional-trains.
[116] See: https://www.deutschebahn.com/en/presse/press_releases/-Climate-friendly-bonds-Deutsche-Bahn-honored-as-green-company-6933992.
[117] See: https://presse.oebb.at/de/dam/jcr:18cce36b-46c5-43b4-9baa-0d6c16e8fd90/Sustainable%20Finance%20Framework_SPO_EN.pdf.

are allocated to specific projects, which contribute to increasing renewable energy capacity, reducing carbon emissions, and enhancing sustainable electricity distribution[118].

The Climate Bonds Initiative has outlined several strategies to enhance the growth of GSS bond markets, including:

1. **Establishing common principles and standards**: At the EU level, efforts are underway with the EU Green Bond Standard (GBS) to enhance and scale up the European green bond market's environmental objectives, in conjunction with the EU’s Green Taxonomy. This initiative is poised to benefit both the issuers and investors of green bonds by facilitating the financing and advancement of green projects[119].
2. **Promoting green securitisation**: This includes standardizing loan contracts, installation processes, operations, and management, as well as establishing green warehousing facilities and green or sustainable covered bond programs, like those in Lithuania. Although green securitization is gaining prominence in the EU market, the European Banking Authority (EBA) suggests delaying the creation of a specific framework for this, anticipating greater success and impact as the EU economy further transitions towards green assets and moves away from the current focus on the use of proceeds in the EU GBS[120].
3. **Enhancing the risk-return profile of climate investments**: This can be achieved by either increasing returns through supportive public policies in the real economy for sustainable projects or by mitigating risks via public financial tools like guarantees, first-loss provisions, and insurance[121].
4. **Implementing tax incentives for issuers and investors**: sovereigns can consider tax incentives to reduce the costs related to issuing sustainable bonds. The structure of these incentives should be integrated into wider tax policy framework.

The Role of Development Banks and Governmental Agencies

Governments are also using traditional financial instruments (e.g., guarantee, loans, etc.) to leverage private finance for the financing of sustainable activities alongside the innovation cycle. There is a plethora of such instruments in place across the EU:

- In **Italy** SACE, the Export Credit Agency, operates a large Green Guarantee Scheme since 2020 to finance the sustainable transition of the Italian economy. The scheme benefited from an initial allocation of close to EUR 0.5 bn and guaranteed a volume of EUR 3 bn to date[122]. Through the green guarantee, which is issued under market conditions and counter-guaranteed by the government (by up to a maximum of 80%), SACE can fund project supporting the low-carbon transition of the country. To support SMEs in their transition, SACE, the manager of the scheme, entered into framework agreements with the Italian banking system and launched a Green online platform for operations of up to EUR 15 million, which can be used by banks for green guarantees on loans especially for SMEs. Simplified templates and forms were designed to ease the access to the scheme for SMEs and help them identify eligible sustainable activities. In October 2023, SACE launched “Green Push” to promote Made in Italy exports and support the green transition. A new solution, unique in the European Export Credit Agency landscape, has been launched to reinforce SACE's commitment to sustainability and facilitate the export of Italian technologies and supplies to support the ESG investments and transitional processes of major global players[123].

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[118] See: https://www.edf.fr/en/the-edf-group/dedicated-sections/investors/bonds/green-bonds.
[119] Principles outline best practices when issuing sustainable bonds through global guidelines and recommendations, promoting transparency and disclosure, and raising awareness on environmental and social impact. Standards provide eligibility criteria according to sectors and sustainable impact for assets and projects that can be used for bonds.
[120] Supporting green securitisation by defining standards for loan contracts, installation processes, operations, and management; providing green warehousing facilities; or set-up green or sustainable covered bond programmes like in Lithuania. A few green securitisations initiatives have been brought to the forefront of the EU securitisation market. Based on a report delivered by the EBA, the European Commission will submit a report on the creation of a Framework for sustainable securitisation to the European Parliament and the Council. However, the EBA recommends postponing the establishment of a dedicated framework. Indeed, its success and impact would increase once “the EU economy has further transitioned, more green assets are available, and the use of proceeds approach prevailing in the EU GBS becomes less relevant148”.
[121] https://www.sace.it/en/media/sace-meets-india-1.6-billion-of-new-projects-being-facilitated-towards-the-green-transition-by-italy-s-export-credit-agency
[122] See https://www.sace.it/en/about-us/our-commitment/sace-for-the-green-new-deal.
[123] See https://www.sace.it/en/media/press-releases-and-news/press-releases-details/sace-launches-'green-push'-to-promote-made-in-italy-exports-and-support-the-green-transition.

- In **France**, the Banque des Territoires and Bpifrance, two public investment banks, adopted a joint climate plan worth nearly EUR 40 bn for the period 2020 - 2024 to support the transition of both companies and public actors. The Plan will be supported with a full range of financing products and supporting tools spanning Venture Capital (VC) investment funds focusing on Greentech, to green loans dedicated to SMEs or leasing, and loans supporting energy efficiency investment in buildings or vehicle fleets.
- Finally, in **Lithuania**, the government plans to leverage public funds with private funds using the expertise of current National Promotional Institutions (NPIs). Given the State has limited capacity to increase its debt, the plan is to use one of the funds established by the State to raise sustainable bonds, including among foreign investors. The proceeds will then be channelled to two main NPIs to finance or invest into smaller scale sustainable projects. The two vehicles in question are: the new Baltic Sustainable Investment Fund, that will provide financing and co-financing of sustainable projects and shall bear the credit risk on a “first risk” basis, providing incentives for private financial institutions to finance sustainable projects; and Coinvest Capital, which will focus on equity and VC investment in cleantech. Notably the European Investment Bank (EIB) and Lithuania have signed a EUR 300 million financing agreement, the first tranche of a EUR 1 billion commitment, to support long-term competitiveness, job creation, and green and digital transitions in Lithuania from 2021 to 2027. This loan is part of a broader EUR 7.7 billion investment plan, co-financed by EU structural funds and national financing, including the EIB loan, aimed at boosting public investment programs, enhancing competitiveness, and facilitating the transition to a climate-neutral economy in Lithuania[124].

The primary takeaway from these examples is the importance of not just concentrating on mobilizing private finance through capital markets, but also employing conventional financial tools to catalyse private investments and, crucially, devising a range of instruments that facilitate sustainable solutions throughout the innovation cycle. **Besides the conventional methods of channelling private capital into sustainable activities, the Member States under review are also investigating strategies to foster innovation and utilize technology in developing novel sustainable finance products and solutions**. Some instances of these measures are:

- In **Ireland**, an innovation programme will be set-up to support the financial industry develop new sustainable finance instruments, products, and services. This will be developed in partnership with the industry and envisaged activities include for example an international scoping exercise to identify emerging best practices, and the establishment of a dedicated Accelerator programme. The programme is expected to extend to nature-related and biodiversity financing activities.
- In the **Netherlands**, the Green Funds Scheme has been instrumental since its inception in 1995. Managed collaboratively by the Ministries of Housing, Spatial Planning and Environment, Agriculture, Nature and Food Quality, Transport, Public Works and Water Management, and Finance, this scheme offers tax incentives for retail investors in green investments and facilitates lower-rate loans for eligible projects including mortgages and others. It has successfully directed significant retail investments into a range of green initiatives, ranging from environmental conservation to sustainable mobility[125]. In addition to traditional green projects, the Dutch market is also pioneering in hydrogen energy as part of its sustainability strategy. The 2020 Hydrogen Strategy by the Dutch government emphasizes hydrogen's key role in industrial, transport, and port sectors, aiming for substantial electrolysis capacity by 2030. This forward-looking approach is complemented by financial strategies and products that support investment in hydrogen[126] infrastructure, aligning with the nation's vision for a sustainable, carbon-neutral future[127].
- In **Germany** the KfW Group's role as one of the world's largest issuers of green bonds highlights its significance in promoting sustainable finance. This emphasis on sustainability is mirrored in the German government's operations, notably in its export credit guarantees and investment guarantees, where environmental, social, and human rights impacts are rigorously assessed. Germany's issuance of its first green bond in September 2020, followed by subsequent issuances, underscores its commitment to eco-friendly financing. The establishment of the Future Fund, with a budget of EUR 10 billion, further

[124] See https://www.eib.org/en/press/all/2023-287-eib-supports-green-and-digital-investment-in-lithuania-with-first-eur300-million-tranche-in-new-financing.
[125] See https://business.gov.nl/subsidy/green-projects-scheme/.
[126] See https://www.reuters.com/markets/europe/dutch-government-invest-750-mln-euros-develop-hydrogen-network-2022-06-29/.
[127] See https://www.linklaters.com/en-us/insights/publications/2021/august/esg-outlook-in-the-netherlands.

demonstrates this commitment, aiming to boost start-ups in environmental and social sectors by partnering with private venture capital firms. For detail information about KfW role see Box 8 below[128].

Box 8: Kreditanstalt für Aufwiederbau (KfW) Case Study[129]

In Germany, the responsibility for issuing public sector green bonds is given to the German development bank (KfW)[130] as a priority, based on Measure 14 (Further develop KfW as a transformation bank) of the German Sustainability Finance Strategy of May 2021 and the German Climate Action Plan 2030. The German SFS builds on the German Sustainability Strategy[131] and the work of the Committee of State Secretaries for Sustainable Development of the Federal Republic of Germany (Staatssekretärausschuss für nachhaltige Entwicklung). Another institutional element of the German sustainable finance ecosystem, following the German Sustainability Finance Strategy, is the Sustainable Finance Advisory Board (Sustainable Finance Beirat) with the participation of interested ministries and other stakeholders from the financial sector, the economy, civil society, and science.

Since 2014, KfW has been issuing green bonds under the label Green Bonds - Made by KfW, which are designed to comply with the GBP standard. To this end, KfW has developed a so-called Green Bond Framework, which in its current version is valid from 1 January 2022 (KfW Green Bond Framework)[132]. The KfW Green Bond Framework is applicable to all types of green bonds and other similar financial products. For investors, the KfW Green Bond Framework provides transparent information on KfW's sustainability objectives and strategy, the development focus of its green bonds, the project evaluation and selection process and the allocation of proceeds.

KfW Green Bonds are unsecured subordinated bonds. Principal and interest payments on KfW Green Bonds are secured from KfW's general funds. They are therefore based solely on KfW's credit rating and are therefore not linked to the performance of any projects financed under KfW's lending programmes. Because of this approach, Green Bonds - Made by KfW are expected to have the same credit rating as other outstanding bonds issued by KfW.

The proceeds of the green bonds are used for the overall financing of KfW. Funds equal to the net proceeds of the green bonds issued for drawdown are allocated to specific credit programmes defined by the KfW Green Bond Framework, which currently cover three priority areas:

- Renewable Energy[133] ,
- Energy efficiency[134], and
- Clean transport[135] .

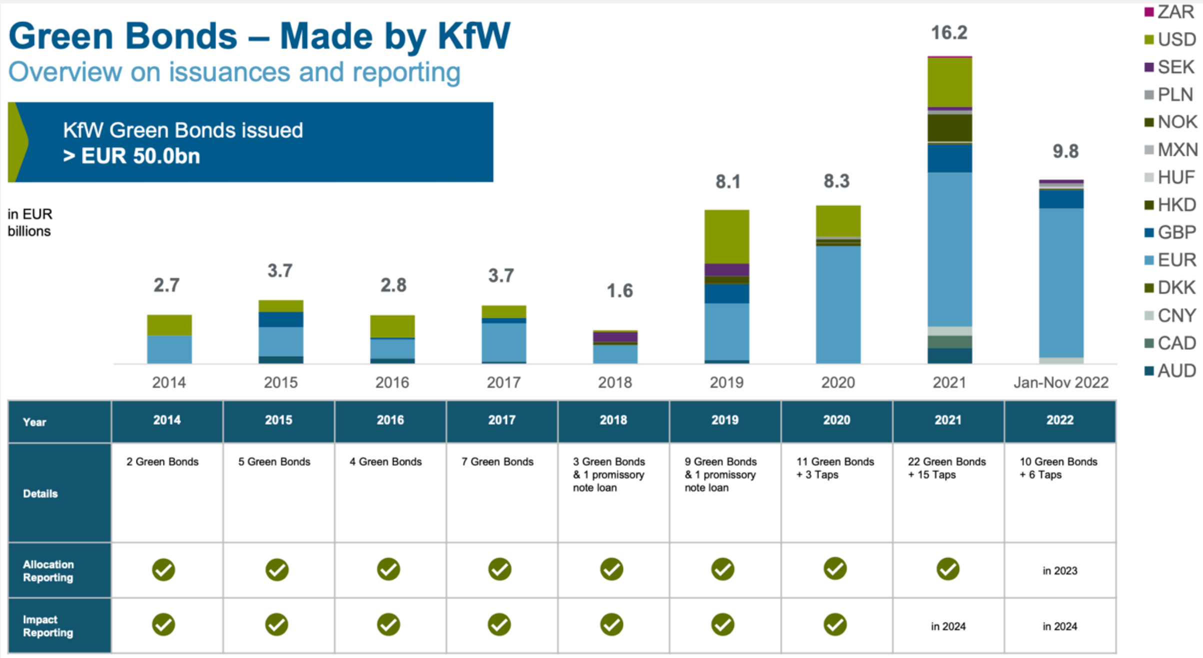
The Sustainable Mobility for Municipalities and Companies programmes include small-scale projects to support climate-friendly vehicles for passenger transport, cars, or light commercial vehicles with low or no CO_2 emissions, climate-friendly vehicles for freight transport and projects to expand climate-friendly transport infrastructure. Currently, approximately EUR 150 million is allocated annually through these programmes. Projects must comply with the EU Taxonomy and KfW sectoral guidelines for compatibility with the Paris Agreement.

[128] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[129] https://www.kfw.de/kfw.de.html
[130] KfW is Germany's national development bank, owned 80% by the German state and 20% by German regions. KfW finances and supports the transformation of the German economy and society to improve economic, environmental, and social living conditions worldwide. Its priority areas for funding are climate action and environmental protection, globalisation, social transformation, digitalisation, and innovation, among others, KfW has set a green target ratio of more than 38% of its total annual business volume financed.
[131] See https://www.bundesregierung.de/breg-de/themen/nachhaltigkeitspolitik/eine-strategie-begleitet-uns/deutsche-nachhaltigkeitsstrategie.
[132] See https://www.bundesregierung.de/breg-de/themen/nachhaltigkeitspolitik/eine-strategie-begleitet-uns/deutsche-nachhaltigkeitsstrategie.
[133] Federal Funding for Efficient Buildings.
[134] See https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilie/F%C3%B6rderprodukte/Eneuerbare-Energien-Standard-(270)/.
[135] Sustainable Mobility for Municipalities and Corporates.

KfW's base rating as of 7/2022 is: AAA (S&P), Aaa (Moody's), AAA (Scope) and Fitch (AAA): Prime (ISS ESG), AAA (MSCI) and Advanced (Moody's ESG Solutions).

The current structure of KfW's funding categories to cover its funding needs in 2022 is shown in the following chart, with KfW's target for 2022 being a total coverage of EUR 90 billion, of which EUR 10 billion is to be raised through the issuance of green bonds.

Figure 2: Development of KfW Green Bond Issues (EUR billion)



Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Details	2 Green Bonds	5 Green Bonds	4 Green Bonds	7 Green Bonds	3 Green Bonds & 1 promissory note loan	9 Green Bonds & 1 promissory note loan	11 Green Bonds + 3 Taps	22 Green Bonds + 15 Taps	10 Green Bonds + 6 Taps
Allocation Reporting	✓	✓	✓	✓	✓	✓	✓	✓	in 2023
Impact Reporting	✓	✓	✓	✓	✓	✓	✓	in 2024	in 2024

Source: KfW

Financing of Municipalities

There is growing recognition of the potential of incorporating municipalities into the development of a SFRs. Municipalities offer unique local insights and expertise, vital for addressing diverse regional sustainability needs. They are key to implementing sustainable finance initiatives at the grassroots level, ensuring practical and localized application of strategies. Municipalities often lead in innovative sustainability practices, providing valuable examples that can be scaled or adapted nationally.

For example, **municipal green bonds in Germany are an evolving aspect of the country's approach to financing sustainable urban infrastructure and environmental initiatives**. In the third quarter of 2022, Germany emerged as one of the top issuers of green bonds in Europe, with an issuance volume of USD 15.89 billion, according to the Climate Bonds Initiative[136]. The most popular investment categories for these bonds were green buildings, but investments in clean transport and renewable energy also showed significant value in terms of carbon reduction[137].

In the Netherlands, the role of municipalities in sustainable finance is multifaceted and integral to the country's environmental management and public investment strategies. The Dutch system is characterized by a long tradition of cooperation and consultation among government bodies, stakeholders, and citizens, with policy related to the environment and spatial planning being largely decentralized to municipal governments.

[136] See https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/germany-italy-lead-q3-green-bond-issuance-in-europe-72471450.
[137] See https://www.kfw.de/About-KfW/Newsroom/Latest-News/News-Details_510336.html.

These local authorities have the legal and financial means to develop and implement local policy, ensuring public participation and democracy at the community level.

Financially, municipalities are supported by institutions like the Municipal Bank of the Netherlands (BNG Bank), established by the Dutch Association of Municipalities to help them access credit markets. BNG Bank, which is partially owned by municipalities, provinces, and a water board, provides loans to various public entities under different conditions, contributing to the financial sustainability of local governments.[138]

About 90% of homes in the Netherlands depending on natural gas for heating, the Netherlands has made a commitment to phase out natural gas by 2050. To achieve the goal, the Netherlands has rolled out a natural gas-free pilot programme in 66 neighbourhood. Thus, The Dutch 100CNSC Cities Pilot is an innovative project involving seven Dutch municipalities: Amsterdam, Eindhoven, Groningen, Helmond, Rotterdam, The Hague, and Utrecht. This project is part of the NetZeroCities initiative and focuses on developing District Investment Platforms in these cities. The primary goal is to close financial gaps for investing in natural gas-free districts and leverage investments from alternative funding sources like pension funds and insurance companies.
Each city in the pilot has its unique approach to achieving these goals:

- **Amsterdam** has developed an approach to incorporate the energy transition in local districts through an (internationally acclaimed) Integral Design Method for Public Space (IOOR). The aim of the method is to combine energy transition, climate adaptation and the redesign of street profiles in an efficient and cost-effective way to prepare cities for a sustainable and resilient future. Amsterdam will implement the IOOR method and the data that got available via IOOR, in the District Investment Platform and will use these in their integrated investment agenda.
- **Eindhoven and Helmond** have developed a checklist for working more integrally on climate actions.
- **Groningen** started using an integral approach, in which issues from the physical and the social domain are matched, for the task of making the district Vinkhuizen more sustainable. The municipality of Groningen is developing their own wind and solar parks.
- **Rotterdam** began making pilot districts natural gas-free in consultation with housing corporations and is coordinating with the central government on making 85,000 houses natural gas-free by 2030.
- **The Hague** is focusing on unlocking private investment and leveraging innovative public revolving fund structures.
- **Utrecht** is targeting private investment barriers and public instruments to tackle these barriers, involving various stakeholders in the setup of the Investment Platform.[139]

Green Fintech Ecosystem

Numerous countries are actively exploring ways to nurture a local green fintech ecosystem, recognizing its pivotal role in facilitating the transition to sustainable finance. Fintech solutions are increasingly seen as key tools for engaging retail investors. They do this by providing easy access to information about investment products through independent comparison tools, or by introducing new investment avenues such as crowdlending, crowd-equity, and access to niche markets like the Italian mini-bond market. Maximizing fintech's potential in directing retail investors towards sustainable options is crucial. Additionally, **fintech offers broader support for the sustainable finance shift**. This includes aiding financial institutions in meeting regulatory requirements related to sustainability, enhancing the collection, verification, and reporting of environmental data, and providing more sophisticated tools for assessing and analysing financial risks associated with climate change and environmental factors.

- In **Italy**, a "Regulatory Sandbox" of FinTech activities was created in 2021-22 to test technologically innovative products and services in the banking, financial and insurance sectors. The second round of Regulatory Sandbox is currently underway. By taking part in the Regulatory Sandbox supervised

[138] See https://www.oecd.org/publications/decarbonising-homes-in-cities-in-the-netherlands-b94727de-en.htm.
[139] See https://netzerocities.eu/the-netherlands-pilot-activity-dutch-100cnsc-cities-pilot/.

intermediaries and Fintech operators can test innovative products and services, while taking advantage of a simplified transitional regulatory regime[140].

- **Ireland's** ambition is to leverage on the growth of its traditional fintech industry to explore the connectivity with the growth in sustainable finance. The Irish Sustainable Finance Fintech Strategy was developed in response to Action 10 of Ireland's SFR[141].

Sustainable Finance Reviews are increasingly focusing on directing capital towards sustainable activities, with various countries issuing sovereign GSS bonds, notably led by France in terms of volume. There's a shift from traditional green bonds to more diverse forms like sustainable and sustainability-linked bonds, reflecting a broader interest in alternative financing. Governments are also working to bolster corporate GSS bond markets through supportive measures and utilizing traditional financial tools such as guarantees and loans to attract private finance for sustainability projects. Additionally, there's a growing trend in leveraging technology to develop innovative finance products, enhancing private capital mobilization for sustainable activities. Recognizing the role of municipalities, there's an increasing emphasis on incorporating their local insights into the development of Sustainable Finance Reviews, addressing regional sustainability needs. Furthermore, the development of a green fintech ecosystem is gaining traction in multiple countries, seen as crucial for transitioning to sustainable finance systems.

The Czech Republic should follow the good practices to embrace sustainable finance trends and advance its sustainability agenda. Adopting strategies such as issuing sovereign GSS bonds, as well as diversifying the types of government-issued bonds, can enhance funding for sustainable projects and align with broader European practices. To maximize the effectiveness of this process, the involvement of national development banks is critical. They provide both capital and expertise for sustainable projects, helping to bridge the gap between government goals and private sector participation. Additionally, promoting municipal Sustainable Finance Reviews is key, enabling localized sustainable urban development through green municipalities. Supporting the growth of corporate GSS bond markets and leveraging traditional financial instruments, while also exploring innovative finance products and fostering a green fintech ecosystem, are equally vital.

[140] See https://www.bancaditalia.it/media/notizia/regulatory-sandbox-second-application-window-for-new-fintech-projects-from-3-november-to-5-december-2023/?dotcache=refresh.
[141] See https://climatefinanceweek.ie/media/1538/sf_fintech_strategy_08.pdf.

4.4 Risk Management

(Polish Good Practice Report, page 39 et seq.)

Summary of General Trends & Good Practices

- **EU's Influence on National Sustainable Policies:** The European Union is influencing national policies to shift capital towards more sustainable sectors by enforcing more rigorous management of sustainability-related risks. This approach is integral to the overall strategy of enhancing sustainable development.
- **Need for Tailored Risk Management Guidance:** Different stakeholders, such as credit institutions, investment fund managers, pension companies, insurers, and banks at both domestic and international levels, as well as state and public bodies, require specialized guidance on independent risk management.
- **Overlooked Risks in Sustainability Transitions:** Many institutions have yet to fully acknowledge or address certain physical and institutional risk factors, like biodiversity loss and pollution. This gap in awareness points to a less mature understanding of transition risks within these organizations.
- **Varying Quality of Risk Management Plans:** Though several countries have developed risk management strategies as part of their sustainability efforts, the effectiveness and thoroughness of these plans differ widely across nations.

The EU is actively shaping national policies to redirect capital towards more sustainable sectors. This effort is marked by increased rigor in managing sustainability-related risks, encompassing both physical and transition risks. **Its sustainable finance orientations were spelled out in July 2021 by publishing the landmark Strategy for Financing the Transition to a Sustainable Economy[142] which was already assessed as part of the EU second sustainable finance package in June 2023**[143]. As outlined by Euronext[144], the EU has intensified its focus on sustainability-related risk management in recent years through the implementation of three key regulations:

1. **Climate Benchmarks Regulation**: This regulation aims to improve the transparency and comparability of benchmark methodologies concerning ESG metrics. It provides investors with clear insights into the environmental sustainability of their investments, enhancing informed decision-making.[145]
2. **Sustainable Finance Disclosure Regulation**: SFDR plays a critical role in steering capital towards sustainable investments. It does this by boosting transparency among financial market participants and advisors regarding sustainability risks. This regulation also ensures more consistent protection for end investors. Currently, SFDR mandates the disclosure of principal adverse KPIs by entities like asset management firms, insurance providers, and financial advisors.
3. **EU Taxonomy Regulation**: This establishes a unified classification system for identifying sustainable economic activities. Its goal is to encourage investments in these areas while addressing concerns about greenwashing. Currently, the regulation demands reporting based on transitional KPIs. It includes a requirement for public interest companies to disclose their Green Asset Ratio (GAR), focusing on[146]:
   - The proportion of turnover derived from Taxonomy-aligned activities.
   - The portion of Capital Expenditure () and Operational Expenditure () allocated to Taxonomy-aligned activities.

The European Central Bank (ECB) recognizes the critical role of assessing and managing climate-related and environmental risks (C&E risks) in ensuring the sustainability of the banking sector. The ECB advocates for the evaluation of public investments for ESG compliance, mandating financial markets to disclose their methodologies and strategies for managing C&E risks in client asset management. This directive from a Banking Union (BU) authority underscores the importance of integrating climate-related risks into both financial

[142] See https://finance.ec.europa.eu/publications/strategy-financing-transition-sustainable-economy_en.
[143] See https://finance.ec.europa.eu/publications/sustainable-finance-package-2023_en.
[144] See https://www.euronext.com/en/news/esg-laws-regulation.
[145] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019R2089.
[146] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R2178.

and non-financial reporting, prompting national governments to align with regional policies and develop their own legislative frameworks and best practices for measuring, disclosing, and managing sustainability risks.

Despite not being part of the BU, the Czech Republic is likely to feel indirect effects, given that many banks operating there are subsidiaries of banks in BU Member States. The Czech Republic can benefit from the guidance provided to BU members by engaging in capacity-building activities and adopting transnational best practices to enhance risk management, as this report discusses. However, these public policy recommendations are primarily geared towards a select group of countries (Austria, Ireland, France, Lithuania, Italy, Germany, and the Netherlands) where the ECB plays a central role in monetary and supervisory policy. In the Czech Republic, these responsibilities fall to the Financial Supervision Authority and the Central Bank, which operate under different supervisory rules and constraints.

There is a need for tailored risk management guidance for various stakeholders, including credit institutions, investment fund managers, pension companies, insurers, both domestic and international banks, and state and public bodies. While the climate-related risks are uniform, their impacts vary across stakeholders, necessitating bespoke management and mitigation strategies. The development of climate risk assessment methodologies and tools, such as scenario analysis, is crucial, yet the approach is fragmented across Member States, with varying qualitative and quantitative measures. A notable observation is the prioritization of the insurance industry in integrating climate-related risks. Re/insurers are crucial in understanding and educating about the societal impacts of climate risks[147].

Therefore, the EU has implemented firm regulations regarding re/insurance companies, such as Commission Delegated Regulation (EU) 2021/1256 of April 21, 2021, amending Delegated Regulation (EU) 2015/35. This regulation mandates insurance undertakings to disclose principal adverse impacts on sustainability factors per Regulation (EU) 2019/2088 (SFDR), and to adjust their processes, systems, and internal controls accordingly. According to the NGFS[148], the assessment of insurers and pension companies' exposures to transition risks can be done through various approaches:

- Aligning insurers' investments with climate policy-relevant sectors, utilizing NACE (Statistical Classification of Economic Activities in the European Community) and CIC (Commercial Industrial Classification) codes.
- Conducting stress tests on insurers and pension companies' government bond portfolios, employing shock scenarios from the LIMITS Scenario Database[149]; and
- Implementing stress tests on insurers and pension companies' exposures using the PACTA (Paris Agreement Capital Transition Assessment) tool.

In certain jurisdictions, such as Austria and Germany, the Financial Market Authority (the Federal Financial Supervisory Authority – BaFin in Germany) has played a pivotal role in adopting these methods. The Austrian Authority has developed comprehensive frameworks and conducted extensive stress-testing and analyses to assess both current and future physical and transition risks, as elaborated in Annex 2. In Italy, regulations have been introduced to emphasize the importance of social and environmental considerations in the operations of insurance companies.

However, many institutions overlook key risk drivers like biodiversity loss and pollution, due to a less developed understanding of these transition risks and a limited number of jurisdictions have effectively recognized and incorporated these risks into their strategic planning. While some are in the stages of developing strategies to address these issues, a significant number have yet to include them in their risk management processes. For instance:

- **France** has mandated all financial institutions to disclose biodiversity and climate-related risks using the concept of double materiality under the new Decree under Article 29 of the Law on Energy and Climate[150]. Companies shall report assets aligned with the environmental criteria set in the European Taxonomy

[147] See https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf_public/climate_risk_web_final_250221.pdf.
[148] See https://www.ngfs.net/sites/default/files/progress_report_on_the_guide_for_supervisors_0.pdf.
[149] The LIMITS Scenario database hosts the results of the LIMITS modelling comparison exercise: the project aims at advancing the understanding of the implementation of climate policies consistent with a 2° objective by assessing the implementation of emissions reduction strategies.
[150] See https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000043541738.

(objective VI). French financial institutions will identify, prioritise, and manage both climate and biodiversity risks, starting in their 2022 reporting exercise covering financial year 2021. As of 2023, the next step is to extend the disclosure to taxonomy aligned financing.

- **Austria** has introduced a voluntary platform, called “HORA”, to help institutions to integrate physical and biodiversity risks including natural catastrophes into their risk management. The response of the private sector and the public is so far overall positive[151].
- The Central Bank of **Ireland** started to embrace the topic of risks as one of a strategic priority. The Bank embedded their commitment to address climate change in their multi-year strategy 2022-2024. This includes the establishment of the Climate Change Unit and Climate Risk and Sustainable Finance Forum[152].
- In April 2022 Bank of **Italy** issued an initial set of expectations on the integration of climate and environmental risks into business strategy, governance, control and risk management systems and market reporting of supervised financial intermediaries[153].
- In December 2019, BaFin, **Germany**'s financial regulatory authority, set a European benchmark with its "Guidance Notice on Dealing with Sustainability Risks"[154], and further established its role by joining the NGFS steering committee and various expert groups on climate-related financial risks. The Act on Corporate Due Diligence Obligations in Supply Chains, effective from January 2023[155], extends these sustainability obligations to the financial sector, requiring large German companies to adhere to human rights due diligence in their supply chains. BaFin's SFS, reinforced by the Federal Ministry of Finance, focuses on risk-oriented regulation, data reliability on financial climate risks, managing climate-related financial risks, preventing greenwashing, and knowledge sharing. Additionally, BaFin plans to collaborate with federal agencies like UBA (German Environment Agency) and BAFA (Federal Office of Economics and Export Control) for enhanced sustainability expertise. Concurrently, the German government's adoption of the climate adaptation law[156] in July 2023 provides a strategic framework for climate adaptation at all administrative levels, supported by discussions on financing and initiatives to help Länder and municipalities develop their climate adaptation strategies.
- In **the Netherlands**, the approach to managing climate change and environmental degradation risks is comprehensive, addressing both physical factors (like floods, droughts, sea level rise, and biodiversity loss) and transition risks associated with moving towards a low-carbon, sustainable economy.[157] Governed by The Dutch Financial Markets Supervision Act (FMSA) [158], which is the primary statute for the financial services sector, this approach includes core regulations, oversight processes, collaborative efforts, and the duties and objectives of regulatory bodies. The "twin peaks" supervision framework is a key feature, with DNB focusing on systemic and prudential supervision for financial stability, and the Dutch Authority for the Financial Markets (AFM) ensuring orderly, equitable, and transparent operation of financial markets. Furthermore, DNB advocates for sustainable economic development and manages the financial sector's climate-related and environmental risks, involving the Dutch financial sector, government, and supervisory authorities through its Sustainable Finance Platform. The AFM supervises the reporting of sustainable developments and enforces adherence to sustainability principles. This integrated approach, supported by both state and banking authorities, highlights the Netherlands' commitment to embedding ESG considerations into its financial system and advancing sustainable practices.[159]

Building on the recognition by the NGFS that “nature-related risks could have significant macroeconomic and financial implications”, Box 9 below provides an overview of what can be done by regulators to initiate the work on this emerging topic.

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[151] See https://hora.gv.at.
[152] See https://www.centralbank.ie/news-media/press-releases/no-time-to-wait-addressing-climate-risk-in-the-financial-system-today-18-october-2022.
[153] See https://www.globallegalpost.com/lawoverborders/environmental-social-governance-559211028/italy-522703403.
[154] BaFin, Guidance Notice on Dealing with Sustainability Risks, https://www.bafin.de/SharedDocs/Downloads/EN/. Merkblatt/dl_mb_Nachhaltigkeitsrisiken_en.html; jsessionid= 0715DC05EA0CE85CCDB482E22E9EC4F1.1_cid500.
[155] See https://www.csr-in-deutschland.de/EN/Business-Human-Rights/Supply-Chain-Act/supply-chain-act.html.
[156] See https://www.bmuv.de/en/pressrelease/german-government-adopts-first-nationwide-climate-adaptation-law.
[157] See https://practiceguides.chambers.com/practice-guides/banking-regulation-2023/netherlands#:~:text=In%20the%20Dutch%20twin%20peaks,fair%2C%20and%20transparent%20financial%20markets.
[158] See https://www.dnb.nl/en/general-news/dnbulletins-2021/sustainability-risks-can-be-measured-despite-data-constraints/.
[159] See https://practiceguides.chambers.com/practice-guides/banking-regulation-2023/netherlands#:~:text=In%20the%20Dutch%20twin%20peaks,fair%2C%20and%20transparent%20financial%20markets.

Box 9: How to Start Working on Nature-related Risks?

A study group was set-up in 2021 by the NGFS and the International Network for Sustainable Financial Policy Insights, Research, and Exchange (INSPIRE) to develop a research-based approach to how central banks and supervisory authorities can fulfil their mandates in the context of biodiversity loss. It identified five key recommendations for central banks and financial supervisors to fulfil their mandates in the face of biodiversity loss. Some of these also apply to other bodies such as MoF:

1. Recognise biodiversity loss as a potential source of economic and financial risk and commit to developing a response strategy to maintain financial and price stability. This includes fully integrating and recognising the risks associated with biodiversity loss and their linkages with climate change in SFRs.
2. Build the skills and capacity among central bank, supervisory staff, and relevant governing bodies as well as market participants to analyse and address biodiversity- related financial risks. Annex 1 of the NGFS-INSPIRE report[160] provides a suggested research agenda to support this capacity building effort.
3. Assess the degree to which financial systems are exposed to biodiversity loss, by, for example, conducting assessments of impact and dependency, developing biodiversity- related scenario analysis and stress-tests. Two EU Member States are considered as pioneers in this field, as they were the first countries to conduct a detailed assessment of the level of exposure of their financial sector to risks associated with biodiversity loss. The Dutch study concluded that "*Dutch financial institutions worldwide have EUR 510 billion in exposure to companies with high or very high dependency on one or more ecosystem services. This comprises 36% of the portfolio examined*"[161]. The French study concluded that "*42% of the value of securities held by French financial institutions comes from issuers that are highly or very highly dependent on one or more ecosystem services*"[162].
4. Explore options for supervisory actions on managing biodiversity-related risks and minimising negative impacts on ecosystems. This could involve reviewing to what extent the existing supervisory framework and toolbox enable the specificities of biodiversity-related financial risks to be addressed and developing supervisory expectations and assessment programmes.

Help build the necessary financial architecture for mobilising investment for a biodiversity-positive economy, including by considering how central banks' monetary policy operations and non-monetary policy portfolio management should be conducted in the context of biodiversity loss.

Another significant voluntary initiative is the PACTA Climate Alignment Assessment, which evaluates the alignment of national financial sectors with the Paris Agreement through detailed scenario analyses. This process generates reports that offer a comprehensive view of financial institutions' exposure to crucial climate-related sectors and their compliance with the Paris Agreement, compared against peer groups. Notably, Austria was the third country, following Switzerland and Liechtenstein, to voluntarily participate in this initiative, assessing 54 Austrian financial institutions. Additionally, the Austrian Financial Market Authority (FMA) has gone a step further by implementing the recommendations from the PACTA Report at the national level. Looking ahead, upcoming EU Regulations will mandate financial institutions to create transition plans. These plans will include multi-year targets and actions that are expected to significantly influence their business models[163].

Many countries have implemented risk management strategies, but there is a notable variation in the quality of these plans. Poland, which has been proactively engaged in the IMF Financial Sector Assessment Program (FSAP)[164], which rigorously monitors financial stability through stress tests, can serve as a good point of reference for the Czech Republic, due to similarities in both countries. The Czech Republic differs from Ireland, France, Germany, Italy, and the Netherlands in terms of financial sector significance as identified by the International Monetary Fund (IMF). These latter countries are listed among the 29 jurisdictions with systematically

[160] See https://www.ngfs.net/sites/default/files/medias/documents/central_banking_and_supervision_in_the_biosphere.pdf.
[161] See https://www.dnb.nl/en/general-news/dnbulletin-2020/indebted-to-nature/.
[162] See https://publications.banque-france.fr/en/silent-spring-financial-system-exploring-biodiversity-related-financial-risks-france.
[163] See https://2degrees-investing.org/resource/pacta-cop-austria/.
[164] See https://www.imf.org/en/Publications/fssa.

important financial sectors. Consequently, in these nations, the FSAP mandates regular financial stability assessments, typically conducted every five years[165].

[165] See https://www.fsb.org/about/leading-by-example/participation/.

4.5 Stakeholder’s Engagement, Capacity Building & Sustainable Finance Literacy

(Polish Good Practice Report, page 48 et seq.)

Summary of General Trends & Good Practices

- **Challenges in Awareness and Skill Development:** A significant hurdle in implementing SFAPs is the lack of awareness and the requisite skills and capabilities. This gap poses a serious threat to the development of strong and credible sustainable finance ecosystems.
- **Importance of Stakeholder Engagement:** Elevating awareness and hastening the involvement of finance professionals, corporations, and other stakeholders in sustainable finance is crucial for aiding the sustainable transition of the real economy.
- **Formation of Coordinating Bodies in Member States:** Each Member State reviewed has established a coordinating body that includes both public and private stakeholders. These bodies play a key role in shaping the design of Sustainable Finance Reviews and SFAPs, although their scope and governance structures vary widely.
- **Urgency in Training and Capacity Building:** There is an urgent need to enhance the training and develop the capacity of relevant personnel within financial institutions, corporations, and public administrations. This step is vital for effectively implementing sustainable finance strategies.
- **Integrating Sustainable Finance in Education:** Incorporating sustainable finance into the curricula of universities and other relevant educational institutions is essential. This integration will help in cultivating a future workforce that is well-equipped to tackle and contribute to sustainable finance initiatives.

A major barrier to the effective implementation of SFAPs and the development of a robust and credible sustainable finance ecosystem is the widespread lack of awareness, appropriate skills, and capabilities. Achieving sustainable financial literacy is crucial for creating a resilient financial sector and ensuring that investments labelled as sustainable genuinely align with science-based transition pathways. A comprehensive understanding of sustainable transition concepts, goals, content, and data is vital among financiers, businesses, and public servants to enable informed investment decisions and mitigate the risks of "competence greenwashing”. Recent academic studies have highlighted a significant gap in many financial and corporate sectors between claims of positive sustainability performance and the actual resources and capacities committed to effective ESG impact measurement, reporting, and verification, often leading to greenwashing[166][167][168].

Thus, capacity building and sustainable finance education are central to most SFAPs, albeit the latter to a lesser extent. It is imperative to enhance awareness and foster active engagement among finance professionals, corporates, and other stakeholders in sustainable finance to aid the real economy's sustainable transition. This involves not only educating about the role of finance in this transition but also convening stakeholders to build a shared understanding and vision of sustainability. The initial step is to bring these stakeholders together to begin discussions and raise awareness about these critical issues.

- In **Italy**, a National Dialogue on Sustainable Finance was established in 2016 as part of the UN led project “Inquiry into the Design of a Sustainable Financial System”. The objective was to identify options across the financial sector. The dialogue identified a growing awareness and increased actions by financial institutions. It also recognized the barriers preventing the further integration of sustainability factors in the financial sector. This initiative was essential to identify common actions and the future steps for the construction of a sustainable finance roadmap and platform that would create the necessary bridge between the public and private stakeholders.
- The **Lithuanian** Ministry of Finance organised jointly with the European Court of Auditors and the Lithuanian Banking Association an international conference on “Making Green Finance a reality in the Baltics”[169] gathering policy makers from the EU institutions and Member States, particularly from the Baltic region, as well as private sector representatives and academia. The objective was to discuss the role of the public sector in the new economy and the required developments. The conference was the opportunity to capture

[166] See https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4303609.
[167] See: https://www.reprisk.com/news-research/reports/spotting-greenwashing-with-esg-data
[168] See: https://www.nature.com/articles/s41599-023-01919-0
[169] See https://www.eca.europa.eu/en/Pages/green-finance-conference.aspx.

the underlying issues and promote ideas for reforms. It is planned that by 2025 green State budget expenditure will make a significant portion of total funds, and all public procurement will become green. It is also expected that more private funds will be attracted to implement green projects, in 2023-2024, they will amount to EUR 0.5 billion (EUR 220 million were raised in 2021-2022)[170].

- **Dutch** Sustainable Finance Platform, which was established by DNB in 2016, aims to promote sustainability in the Netherlands by removing barriers to sustainable financing and fostering collaboration. It brings together financial institutions, supervisory authorities, and government ministries to work on sustainability initiatives. The platform organizes working groups focusing on various themes like climate adaptation, sustainability communication, SDG impact assessment, and circular economy. These groups present their findings and progress at the platform's annual conference[171].

- The **German** government established the Sustainable Finance Advisory Committee in 2019 with 34 committee members and observes from the financial sector, real economy, academia, and civil society, and supported by 19 observers. It acts independently. Among other things, the Committee advises the German government on the development of its Sustainable Finance Strategy, promotes important dialogue between the various stakeholder group and provides important impetus for debase on sustainability at the national and European level[172]. Furthermore, the KfW plays a significant role in the national stakeholder engagement as described in Box 10.

Box 10: Role of German National Development Bank (KfW) in Stakeholder Engagement

KfW in Germany plays a pivotal role in enhancing stakeholder engagement in sustainable finance, which is a key part of their strategy for promoting a sustainable and greenhouse gas-neutral future. In 2018, KfW established a Stakeholder Panel, consisting of experts from various sectors including finance, NGOs, research, and official authorities. This panel is surveyed annually, and their feedback is incorporated into KfW's materiality analysis, which plays a crucial role in defining the central issues for sustainability management at the bank. This process helps KfW prioritize areas of action in sustainability, considering the perspectives and impacts as viewed by external stakeholders. The topics with the highest priority from stakeholders in recent years include appraisal of financing activities, capital markets, corporate governance, and risk management, which are integral to the bank's core business operations.[173]. The key pillars of the approach is as follows:

1. **Stakeholder Panel Setup and Composition**: Established in 2018, the Stakeholder Panel is a group of experts from various sectors, including the financial sector, non-governmental organizations, the research community, and official authorities. This diverse composition ensures a broad range of perspectives and expertise is brought to the table.
2. **Annual Surveys and Feedback Integration**: The members of this panel are surveyed once a year. The feedback and insights provided by these experts are integral to KfW's materiality analysis. This analysis is a tool used by KfW to identify and prioritize the central issues for its sustainability management.
3. **Impact of Stakeholder Perspectives**: The perspectives gathered from stakeholders are key to prioritizing areas of action in KfW's commitment to sustainability. This stakeholder input helps KfW to understand the external views on its impact on the environment and society, which might differ from its internal assessment.
4. **Materiality Analysis Process**: The materiality analysis, which integrates stakeholder feedback, involves several steps:
    - Identification of sustainability topics linked to management based on previous analyses, surveys, sustainability mission statements, and external sustainability standards and frameworks.

[170] See https://finmin.lrv.lt/en/news/green-finance-will-promote-transformation-of-the-lithuanian-economy.
[171] See https://www.dnb.nl/en/green-economy/sustainable-finance-platform/.
[172] See www.sustainable-finance-beirat.de/en.
[173] See https://www.kfw.de/nachhaltigkeit/About-KfW/Sustainability/Strategie-Management/Sustainable-Finance/.

- Detailed surveys of the Stakeholder Panel, where members provide insights on these identified sustainability topics, including their impact and relevance for stakeholder groups. They also recommend courses of action and provide additional feedback.
- Evaluation of the business relevance of these topics in workshops involving members of KfW’s sustainability management, corporate strategy, and risk management teams. This step also includes a validation of the Stakeholder Panel survey results.

5. **Resulting Priorities and Actions**: From the stakeholder perspective, topics such as the appraisal of financing activities, capital markets, corporate governance, and risk management have emerged as priorities. These are closely linked to the management of the bank’s core business. Stakeholder feedback has influenced KfW’s approach to these areas, including the need for proactive efforts in shaping external parties, focusing on where financing should be directed, and integrating climate risks into risk management.
6. **Ongoing Engagement and Adaptation**: KfW continually adapts its strategies and actions based on stakeholder feedback and the evolving landscape of sustainable finance. This includes adjusting its corporate governance to align with sustainability factors and incorporating insights from external sustainability ratings[174].

Each of the Member States reviewed has established a coordinating body comprising both public and private stakeholders to guide the formulation of their SFAPs and roadmaps. The structure and governance of these bodies, however, differ significantly across countries. Effective coordination is essential to develop an SFAP and roadmap that accurately reflects the unique characteristics and requirements of local stakeholders. The leadership of these bodies varies, with some being directed by the public sector (as seen in Austria), others originating from private initiatives (like in France), or through public-private collaborations (as in Ireland). Their mandates are diverse, ranging from raising awareness and facilitating public consultations to informing decision-making processes at national, EU, or international levels. Various models of these platforms have been established with the goal of inclusively integrating all relevant parties in the sustainable transition of financial markets.

- In **Ireland**, Sustainable Finance Ireland[175] is a public-private initiative that works to position and promote Ireland as a leader in sustainable finance. The initiative is tasked with coordinating and delivering Ireland’s National SFR.
- In **Austria** the Ministry for Climate Action launched the Green Finance Alliance to support financial companies on their pathways towards achieving climate neutrality and make a voluntary yet binding pledge to align their portfolios with the 1.5-degree climate target set by the Paris Agreement[176].
- In **Italy**, a group led by public institutions was created in 2022 to formalise the set-up of a Sustainable Finance Platform[177]. The Platform plans on launching two working groups in 2023, focusing on reporting (regarding the future implementation of the CSRD) and on capacity building and financial education.
- In **France** actors started to gather around the topic of sustainable finance following the Paris Agreement in 2015. The first “Paris Green & Sustainable Finance Initiative”[178] was launched in 2016 by Paris Europlace to support the rapid mobilisation of the French financial industry, in line with commitments taken by public authorities. In June 2017, the Initiative was renamed "Finance for Tomorrow"[179] and became a branch of Paris Europlace. Finance for Tomorrow became the “Institut de la Finance Durable”[180] to better federate and accelerate the actions undertaken by the financial institutions of the French financial centre and French companies to achieve the energy and environmental transition. In parallel to these developments, a Sustainable Finance Observatory was launched in 2019 to enhance understanding, tracking and evaluation of the financial sector's gradual transformation by observers and stakeholders.

[174] See https://www.kfw.de/microsites/Microsite/nachhaltigkeitsbericht.kfw.de/archiv-2019/en/discourse/stakeholder-involvement.html.
[175] See https://www.sustainablefinance.ie/.
[176] See https://www.bmk.gv.at/en/green-finance/alliance.html.
[177] See Interview with the Italian Ministry of Economy and Finance.
[178] See https://www.paris-europlace.com/sites/default/files/public/parisgreensustainablefi_europlace_2016_eng_1.pdf.
[179] See https://institutdelafinancedurable.com/.
[180] See https://institutdelafinancedurable.com/observatoire-de-la-finance-durable/.

- In 2016, **Dutch National Bank** set up the Sustainable Finance Platform to boost awareness and implementation of sustainable financing in the financial sector. Additionally, DNB co-founded the international NGFS and was the first Central Bank to endorse the UN PRI. The state also launched Invest-NL in 2020, a green investment initiative with a capital of EUR 1.7 billion. The Sustainable Finance Platform, chaired by DNB and comprising various financial and governmental bodies, focuses on fostering knowledge exchange and encouraging actionable measures within the financial sector on sustainability. It operates through working groups dedicated to various themes like climate adaptation, sustainability communication, SDG impact assessment, partnership for carbon accounting, circular economy, and biodiversity[181].
- In Germany, the Green and Sustainable Finance Cluster Germany (GSFCG) plays a crucial role in driving the transition to a sustainable economy by representing and fostering activities in sustainable financing within the German financial market. Alongside this, the Net Zero Banking Alliance Germany (NZBAG), with members like BNP Paribas, Commerzbank, Deutsche Bank, DKB, DZ Bank, ING, LBBW, and Umweltbank, has pledged to align their portfolios with climate neutrality in accordance with the Paris Agreement. This involves reducing CO_2 emissions from investments and loans to net zero by mid-century. The NZBAG, in collaboration with the global Net Zero Banking Alliance (NZBA) of UNEP FI, focuses on adapting investment and loan portfolios to meet the 1.5-degree climate target. The GSFCG supports NZBAG in developing methodologies and governance approaches for climate-neutral investments[182].

It is essential to expedite the training and skill enhancement of personnel within financial institutions, corporations, and public administrations to adeptly handle sustainability issues. The complexity and breadth of sustainability necessitate specialized skills and knowledge. This requirement is further emphasized by regulatory advancements, particularly the delegated acts (Level 2) of the Markets in Financial Instruments Directive (MiFID II), which mandate financial advisors to inquire about retail investor's sustainability preferences and consider these in their financial product offerings. This necessitates a certain level of sustainability proficiency among financial advisors, making their thorough training imperative. All the SFAPs and SFR that were reviewed encompass PaMs related to capacity building, underscoring the importance of equipping relevant staff with the necessary sustainability expertise.

- In **Lithuania**, the proposed Green Finance Institute will be tasked with the design of training programmes for financial institutions servicing clients (e.g. banks, investment brokerage firms, pension funds and other smaller players) and professional consultancy actors (e.g. investment advisers, auditors, actuaries and others) to ensure common understanding of key topics including: ESG qualification pursuant to the EU Taxonomy Regulation and other laws; ESG disclosure requirements; Identification of sustainable projects; Impact reporting; and Possibilities and requirements for participation in financial facilities offered by national promotional institutions[183]. This focus on green finance in the Baltics is in line with the Bank of Lithuania's Green Strategy for 2023-2025. This strategy outlines five key initiatives aimed at enhancing climate sustainability in its operations. These include conducting climate risk stress tests and setting up continuous monitoring for climate-related risks within the financial sector starting in 2023, enforcing green disclosures to address the lack of public climate-related data, creating a forum for dialogue on climate change issues, advocating for the rounding of cash transactions to reduce the environmental impact of cash, and implementing 100% green procurements to minimize the organization's carbon footprint[184].
- In **France**, the financial market supervisor AMF decided in February 2021 to create a specific module to verify the sustainability-related competences of financial professionals, and to give more weight to sustainability issues in the general AMF certification for financial professionals, by almost quadrupling the number of sustainability questions in the general exam (from 4 to 15)[185].
- In **Ireland** the Sustainable Finance Skillnet[186] was established to develop skills and leadership capacity to advance ESG best practice across Ireland’s financial services sector. The current plan is to create 5000 net new jobs in the international services sector by the end of 2026[187].

[181] See https://www.dnb.nl/en/green-economy/sustainable-finance-platform/.
[182] See https://gsfc-germany.com/en/net-zero-banking-alliance-germany/.
[183] See https://finmin.lrv.lt/en/news/new-plan-for-development-of-green-finance-in-lithuania-public-consultations-begin.
[184] See https://www.lb.lt/en/news/bank-of-lithuania-green-strategy-outlines-plans-for-2023-2025
[185] See https://shareaction.org/wp-content/uploads/2021/06/NGO-recommendations-on-sustainability-and-EU-retail-investment- June21.pdf
[186] See https://sfskillnet.sustainablefinance.ie/.
[187] See https://www.sustainablefinance.ie/2022/10/19/irelands-first-sustainable-finance-strategy-for-the-fintech-sector-launched/.

- Promoting science and research is an essential element of **German** government’s initiatives. These initiatives include the funding guideline “Climate Action and Finance”, which is part of the Federal Ministry of Education and Research’s “Research for Sustainable Development” strategy. The Ministry also funds initiative “Economics of Climate Change”. The Government further funds projects such as the Federal Environmental Agency’s “Towards a sustainable financial sector: Empirical principles, methods and instruments,” the Sustainable Finance Research Platform or the European Sustainable Finance Survey[188].

Additionally, sustainable finance must be integrated into the curricula of universities and other educational institutions. This integration should occur through both specific modules and comprehensive courses within existing programs, as well as through the development of dedicated programs on Sustainable Finance. The interdisciplinary nature of sustainable finance, encompassing traditional finance and economics as well as the hard sciences like climate and biodiversity studies, poses challenges in curriculum development. Establishing new and innovative Chairs on Sustainability and Sustainable Finance is critical not only for transforming educational programs but also for advancing related research.

- In **France**, universities and “Grandes Ecoles” specialised in engineering, business or political science are now integrating sustainability in their basic curricula, promoted by initiatives led by youth association such as “Pour un Reveil Ecologique”[189]. Audencia Business School joined efforts with the “Shift Project” (non-profit) to reflect on a new and sustainable approaches to economy and finance education[190]. The number of Masters degree dedicated to Sustainable Finance is also growing, as well as the number of post graduate thesis and doctorate thesis dedicated to this topic, and supporting the research overall, because of a strong demand from students to receive an education “aligned with the Paris Agreement”[191].
- In **Austria**, the Ministry for Climate Action cooperated with the Vienna Stock Exchange to develop the learning kit “Investing Responsibly for the Future” for upper secondary pupils. It provides teachers a detailed set of materials that covers the key topics related to green financial literacy in an understandable and practice-oriented way. At university level, a part-time MBA in Sustainable Finance Management was recently launched to prepare professionals of the finance sector to play a key role in the transformation of the economy and implement sustainability principles in the investment and financing area, risk, and product management, etc[192].
- In the **Netherlands**, several universities offer master's programs focusing on green finance and ESG. Maastricht University provides a one-year, full-time Master's in Sustainable Finance, preparing students for roles like financial analysts and sustainability experts, with a curriculum that includes classes, group work, and independent study, leading to an MSc in International Business. Utrecht University offers a Master's in Sustainable Finance and Investments, integrating finance knowledge with sustainability principles. Additionally, EDHEC Business School has an MSc in Climate Change & Sustainable Finance, a double degree program that combines financial expertise with an understanding of the scientific challenges in transitioning to a low-carbon economy. These programs indicate the increasing integration of sustainability considerations into financial education and training[193].
- **German** universities also offer a diverse range of MBA programs focusing on sustainability, ESG, and taxonomy, catering to the growing demand for sustainable business practices. These programs, available at institutions like Technische Universität Berlin, Goethe University Frankfurt, and FAU Erlangen-Nürnberg, cover specialized areas such as sustainable building, mobility management, global management, and specific sectors like renewable energy and water management. They combine theoretical knowledge with practical applications, preparing graduates for roles in sustainability consulting, corporate sustainability, and various environmentally focused organizations.

In Europe, significant strides are being made in sustainable finance, as evidenced by initiatives in Italy, Lithuania, the Netherlands, and Germany. Italy's 2016 National Dialogue on Sustainable Finance focuses on integrating sustainability in the financial sector and developing a roadmap for sustainable finance. Lithuania emphasizes

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[188] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[189] See Qui sommes-nous? - Pour un réveil écologique (pour-un-reveil-ecologique.org).
[190] Document de présentation | Projet ClimatSup Business (theshiftproject.org).
[191] See 20220607_Rapport_Former-a-une-finance-ecologique_WWFFrance.pdf.
[192] Press Release – FHWien der WKW Launches MBA in Sustainable Finance Management (fh-wien.ac.at).
[193] See https://curriculum.maastrichtuniversity.nl/education/master/master-international-business-track-sustainable-finance#:~:text=,MSc%20in%20International%20Business.

green finance through international conferences and the proposed Green Finance Institute, aiming to enhance sustainable finance understanding and implementation. The Dutch Sustainable Finance Platform, established by De Nederlandsche Bank, fosters collaboration and knowledge exchange to promote sustainable financing. Germany's approach includes the Sustainable Finance Advisory Committee and KfW bank's stakeholder engagement, underscoring the country's dedication to sustainability in finance. These countries are also integrating sustainable finance into academic curricula, reflecting a broader commitment to aligning investments with science-based sustainability pathways and addressing the challenge of competence greenwashing.

For the Czech Republic, the highlighted points emphasize crucial aspects of advancing its sustainable finance agenda: Addressing the lack of awareness and skills in sustainable finance is critical, as this gap poses a threat to developing a strong and credible sustainable finance ecosystem. Engaging finance professionals, corporations, and other stakeholders is vital for transitioning the real economy sustainably. The formation of coordinating bodies, involving both public and private stakeholders, can greatly aid in shaping Sustainable Finance Reviews and Action Plans, tailored to the Czech context. There is also an urgent need for training and capacity building within financial institutions, corporations, and public administrations, to effectively implement sustainable finance strategies. Moreover, integrating sustainable finance into educational curricula is essential, preparing a future workforce that is well-equipped to support the country's sustainability goals.

5. Concluding Remarks and Next Steps

This report's in-depth exploration of sustainable finance across various EU Member States has revealed the multifaceted and dynamic nature of this field. It highlights the significant variation in approaches and practices among the EU countries, emphasizing the complexity of sustainable finance regulation, non-financial reporting, capital supply and allocation, risk management, and stakeholder engagement.

A key insight from the report is the urgent need for standardization and harmonization in sustainable finance practices, especially in regulatory frameworks and reporting standards. This diversity, while reflecting each nation's unique economic and environmental context, underscores the necessity for more uniform practices across the EU. The absence of comprehensive national roadmap underlines a critical gap that the Czech Republic can address proactively. **Developing a structured national sustainable finance roadmap could provide clear guidance to its financial and non-financial institutions, aiding in a more effective and streamlined sustainable transition.**

Despite the diverse structures of sustainable finance roadmaps, their alignment with specific visions or sustainability objectives is consistent. This presents an opportunity for the Czech Republic to design a sustainable finance strategy that balances adaptability with clear, goal-oriented actions, drawing on the experiences and best practices of other EU Member States. **The report also underscores the pivotal role of Ministries of Finance and national banks in shaping sustainable finance initiatives across different EU countries.** This highlights the importance of strong leadership and expertise in driving these initiatives. The Czech MoF could take a cue from this, assuming a leading role in shaping the national sustainable finance strategy and leveraging lessons from its EU counterparts.

A holistic approach is crucial, as demonstrated by the findings on non-financial reporting, the evolution of innovative financial products, and risk management strategies. For the Czech Republic, integrating ESG considerations across all aspects of financial decision-making is essential.

Lastly, the emphasis on stakeholder engagement, capacity building, and sustainable finance literacy is a vital aspect for the Czech Republic to consider. Investing in educational and training programs for financial professionals, along with incorporating sustainable finance into academic curricula, will be key in developing a workforce that is knowledgeable and competent to navigate the challenges of sustainable finance.

Concrete recommendations for the Czech Republic will follow in the additional steps of the Assignment during the year 2024. This report will be built upon by Deliverable 3: Diagnostic Report and Deliverable 4: Report on Public Policy Options on Sustainable Finance, Action Plan, and Roadmap for Implementation. These Deliverables will be supported by an ongoing Deliverable 5: Capacity Building, Knowledge Sharing and finalized by Deliverable 6: Final Report.

6. List of Abbreviations

AFM	Dutch Authority for the Financial Markets
AMF	French Financial market supervisor
BAFA	Federal Office of Economics and Export Control
BaFin	Financial Market Authority (Federal Financial Supervisory Authority)
BMK	The Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (Austria)
BNG Bank	Municipal Bank of the Netherlands
BU	Banking Union
C&E risks	Climate-related and Environmental Risks
Capex	Capital Expenditure
CCfD	Carbon Contracts for Difference
CDP	Carbon Disclosure Project
CDSB	Climate Disclosure Standard Board
CIC	Commercial Industrial Classification
CMU	Capital Markets Union
CONSOB	Commissione Nazionale per le Società e la Borsa (National Commission for Companies and the Stock Exchange)
COP	Conference of the Parties
COVIP	Commission for the Supervision of Pension Funds
CSRD	Corporate Sustainability Reporting Directive
DG REFORM	European Commission Directorate General for Structural Reform Support
DNB	De Nederlandsche Bank
DSTA	Dutch State Treasury Agency
EBA	European Banking Authority
EBRD	European Bank for Reconstruction and Development
ECB	European Central Bank
EFRAG	European Financial Reporting Advisory Group
EIB	European Investment Bank
EIF	European Investment Fund
ESAs	European Supervisory Authorities
ESAP	European Single Access Point
ESG	Environmental, Social, and Governance
ESMA	European Securities and Market Authority
ESRS	European Sustainability Reporting Standards
EUGBS	European Green Bond Standard
EU	European Union
FAQ	Frequently Asked Question
FMA	Financial Market Authority
FMSA	The Dutch Financial Markets Supervision Act
FSAP	Financial Sector Assessment Program
GAR	Green Asset Ratio
GBP	Green Bond Principles
GBS	Green Bond Standard
GDP	Gross domestic product
GGS	Green Guarantee Scheme
GRI	Global Reporting Initiative
GSFCG	Green and Sustainable Finance Cluster Germany
GSS bond	Green, Social, and Sustainability bond
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
INSPIRE	International Network for Sustainable Financial Policy Insights, Research, and Exchange
IOOR	Integral Design Method for Public Space
IOSCO	International Organisation of Securities Commissions
ISFCOE	The International Sustainable Finance Centre of Excellence

ISSB	International Sustainability Standards Board
IVASS	Institute for Insurance Supervision
KENFO	German Nuclear Waste Management Fund
KfW	Kreditanstalt für Aufwiederbau (German development bank)
KPI	Key Performance Indicator
LEC	French Energy-Climate Law
MiFID II	Markets in Financial Instruments Directive
MoF	Ministry of Finance
NACE	Statistical Classification of Economic Activities in the European Community
NaDiVeG	Sustainability and Diversity Improvement Act
NAP	National Action Plan
NGSF	Network for Greening the Financial Systeboxm
NFRD	Non-Financial Reporting Directive
NPIs	National Promotional Institutions
NTMA	National Treasury Management Agency
NZBA	global Net Zero Banking Alliance
NZBAG	Net Zero Banking Alliance Germany
OAT	Green Treasury Bond
OeKB	Oesterreichische Kontrollbank AG
Opex	Operational Expenditure
PACTA	Paris Agreement Capital Transition Assessment
PaMs	Policies and Measures
PFI	Private Finance Initiative
PwC	PricewaterhouseCoopers
RRF	Recovery and Resilience Facility
SACE	Italian Export Credit Agency
SBTi	Science Based Targets initiative
SDGs	Sustainable Development Goals
SFAP	Sustainable Finance Action Plan
SFDR	Sustainable Finance Disclosure Regulation
SFR	Sustainable Finance Roadmap
SFS	Sustainable Finance Strategy
SGB	Sustainable Green Bond
SIF	Sustainable and Responsible Investment Forum
SLB	Sustainability-linked Minibonds
SMEs	Small and Medium-sized Enterprises
SOEs	State Owned Entities
TCFD	Task Force on Climate-related Financial Disclosures
TNFD	Task Force on Nature-related Financial Disclosures
UBA	German Environment Agency
UN PRI	United Nations Principles for Responsible Investment
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
VC	Venture Capital
VRF	Value Reporting Foundation

Annex 1: Non-financial Reporting, Disclosure & Data Collection

Table A1.1: **Overview of the Policies and Measures Linked to Non-financial Reporting, Disclosure and Data Collection Identified in the Analysed Member States**

Country	Policies and Measures Across the Analysed Member States
Austria	• The Sustainability and Diversity Improvement Act from 2017 transposes the NFRD in national law, while expanding and specifying the reporting obligation for non-financial information[194]. • The Pension Fund Act introduced disclosure requirements for pension funds to implement ESG approach and disclose its integration in their investments. • The establishment of the OeKB ESG Data hub helped improve the availability of ESG data. Companies can collect and manage ESG data on the platform with standardized questionnaires.
France	• Following the implementation of Article 173-Provision VI Energy Transition Law[195],France reports non-financial information ahead of the European SFRD since 2015. • The 2019 Law on Energy and Climate updates the Energy transition law, introduction details on disclosures across both biodiversity and climate[196]. • Publication of the implementing decree of Article 29 of the Energy-Climate Law on non-financial reporting by market players – Direction générale du Trésor[197]. • Since 2021, all financial institutions are required to disclose biodiversity-related risks, using the concept of double materiality[198]. Financial institutions shall also disclose their strategy for reducing biodiversity impacts. They must include specific targets and measurement of alignment with international biodiversity goals. • Institutional investors and companies follow a double materiality approach to disclose how their investments and impact on the climate impact each other. • The implementation of the Law on Energy and Climate[199] requires financial institutions to publish information on the portion of their assets complying with the environmental criteria set out in the EU Taxonomy. It also provides details on expected disclosures across both biodiversity and climate. • AMF has updated its policy to specify the procedures for preparing and submitting the report required under Article 29 of the Energy-Climate Law (LEC 29) from investment services providers, including asset management companies (see the link)[200]. • France implemented the IMPACT platform in 2020 dedicated to financial and non-financial companies to gather ESG data[201].

[194] See https://www.parlament.gv.at/PAKT/VHG/XXV/ME/ME_00257/index.shtml#.
[195] See https://www.legifrance.gouv.fr/loda/id/JORFTEXT000031044385/.
[196] See https://www.legifrance.gouv.fr/jorf/article_jo/JORFARTI000039355992.
[197] See https://www.legifrance.gouv.fr/jorf/article_jo/JORFARTI000039355992.
[198] See https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000043541738.
[199] See https://www.legifrance.gouv.fr/jorf/article_jo/JORFARTI000039355992.
[200] See https://www.amf-france.org/en/news-publications/news/reporting-under-article-29-energy-climate-law-amf-updates-its-policy-how-prepare-and-submit-reports.
[201] See https://portail-rse.beta.gouv.fr/

Ireland	• An Irish TCFD campaign has been underway since 2021, supported by the public sector and firms, including financial actors, large corporate entities, and semi-state organisations[202]. • Ireland welcomes multiple international companies and needs to balance and align international standards and agreement and European rules (e.g., UNFCCC Art 2.1 and TCFD vs. Templates stemming from CSRD)[203].
Italy	• In 2012, Italy's Commission for the Supervision of Pension Funds adopted a resolution that requires the communication of any ethical, environmental, and/or social criteria in the statement of investment principles[204]. • The 2015 update of the “Corporate Governance Code of Italian Listed Companies” transposed the “NFRD recommends the boards of listed companies to take into account any risk that may affect the sustainability of the business in the medium-long term when assessing the company's risk profile”[205]. In addition, the code recommends setting up a board committee tasked with supervising sustainability issues related to the company's business. • Institutional data on environmental matters is transparent in Italy due to the obligation for all administrations to publish their environmental information regarding their institutional activities on their institutional website (highlighted in a special section called “Environmental Information”). • The main hub for the collection and monitoring of environmental information is the SINA (National Environmental Information System), established by the Ministry for Ecological Transition. • The data and the geographic information, collected by ISPRA e SNPA are stored and make public and accessible also in real time, as part of the National Environmental Information System which guarantees the effective link between the initiatives implemented by the various subjects in the collection and organization of data, the consistent maintenance of information flows and the divulgation of data to the public administrations, researchers, experts and all the citizens[206].
Lithuania	• Lithuania is working on broadening the scope of companies complying with the NFRD and the incoming CSRD and developing criteria[207].
Germany	• The German government provides support to the financial sector by setting a clear framework for sustainable investment. These include CO2 pricing and, for example, the pilot program for introducing climate protection contracts based on the Carbon Contracts for Difference approach[208]. • The German government supports strengthening non-financial reporting requirements as part of the upcoming revision of Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large companies and groups (the “CSRD”)[209].

[202] See https://www.sustainablefinance.ie/wp-content/uploads/2021/10/Irish-SusFinance-Roadmap-FINAL-FINAL-OCTOBER- 2021.pdf
[203] Interview conducted by ICF.
[204] See Articles 4-5 of “Provisions on the Process of Implementing the Investment Policy”.
[205] See legislative Decree No. 254/2016.
[206] See https://www.isprambiente.gov.it/en/databases.
[207] Interview conducted by ICF.
[208] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[209] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.

	• In the view of the German government, the recommendations of the TCFD represent an important element of uniform global standards for sustainability reporting. The German government will continue to advocate this at the G7 and G20 levels[210]. • If there is no European initiative from the European Commission soon, the German government will outline the introduction of a “traffic light for investment products” with the aid of the Federal Environment Agency. This includes options at the European level. The system is intended to provide investors with quick and easy information on how to assess and incorporate sustainability when investing. This system should be based on existing regulations to ensure consistency (e.g., EU Disclosure Regulation) and take social as well as environmental aspects into consideration. The objective is to make the treatment of sustainability aspects transparent for investors in as many financial products as possible[211].
Netherlands	• The CSRD implementation is pushed through with a draft bill proposing amendments to key Dutch laws, including the Audit Firms Supervision Act, the Financial Markets Supervision Act, and the Dutch Civil Code. • Financial institutions are encouraged to incorporate sustainability risks into their overall risk profiles, with a focus on managing both physical and transitional risks. These efforts align with the requirements of the NFRD, reflecting a commitment to enhanced sustainability reporting and risk management in the financial sector[212]. • DNB has published a comprehensive supervisory approach[213] for managing climate and environmental risks, highlighting the concept of double materiality. • The Netherlands aligns with European Union regulations such as the SFDR and the EU Taxonomy Regulation. • The government provides financial incentives to support initiatives, such as Green Funds Scheme supporting organic farming, greenhouses, and renewable energy projects, and a Green Mortgages Scheme for energy performance improvements in buildings. Dutch AFM focuses on promoting fair and transparent financial markets.

Table A1.2: Financial Sector and EU Taxonomy (PwC Study “EU Taxonomy Reporting 2023 – Analysis of the Financial and Non-financial Sector”)

1. **Disclosure of Taxonomy KPIs**: Most financial institutions include their Taxonomy Key Performance Indicators (KPIs) in their annual reports, although some opt for a separate non-financial statement. These KPIs, indicating the proportion of Taxonomy-eligible activities, show significant variation and differing methodologies, making comparisons challenging.
2. **Transparency and Methodology**: The methods for calculating Taxonomy KPIs are not always transparent, with some institutions failing to disclose their calculation processes.
3. **Granularity in Reporting**: There is a notable variance in reporting details, with some institutions providing only basic KPIs while others offer additional explanations and comments. Challenges such as poor data quality and lack of standardization in reporting by non-financial counterparties are frequently cited.

[210] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[211] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[212] See https://www.dnb.nl/en/green-economy/sustainable-finance-platform/.
[213] See https://www.moodysanalytics.com/regulatory-news/mar-30-23-dnb-publishes-guide-on-climate-and-environmental-risk-management#:~:text=DNB%2C%20the%20central%20bank%20of,managing%20climate%20and%20environmental%20risks.

4. **Reporting Specifics**: Half of the financial institutions don't specify if their "Taxonomy eligible" and "non-Taxonomy eligible" KPIs (KPIs 1 and 2) are based on Capital Expenditure () or turnover.
5. **Use of Reporting Templates**: Although reporting templates in the Taxonomy Regulation annexes will be mandatory from the 2023 financial year, they are not yet widely adopted.
6. **NFRD Compliance and Data Sources**: Discrepancies exist in identifying companies subject to the NFRD, with most institutions not specifying their data sources for such determinations.
7. **Additional Voluntary KPIs**: Some institutions publish additional voluntary KPIs, like "assets not within scope of Taxonomy Regulation."
8. **Impact of Business Models and Portfolios**: The diverse business models and portfolio compositions significantly affect the reported Taxonomy KPIs.
9. **Insurance Companies**: These companies report additional underwriting KPIs, with varying calculation approaches.

Non-Financial Sector and EU Taxonomy:

1. **Disclosure Practices**: Nearly half of the non-financial companies report their Taxonomy KPIs in their sustainability reports, with almost 40% doing so in their annual reports.
2. **Use of Mandatory KPI Templates**: Over half of the companies use the mandatory KPI templates, with less than a quarter making minor alterations.
3. **Discrepancy in Economic Activities**: There is a notable discrepancy between Taxonomy eligible and Taxonomy aligned economic activities.
4. **Reporting Averages**:
   - Turnover: Average Taxonomy eligibility at 26%, and alignment at 7%.
   - Average eligibility at 37%, and alignment at 10%.
   - Average eligibility at 27%, and alignment at 8%.
5. **Industry-Specific Reports**:
   - Real Estate: Highest Taxonomy eligibility percentages on turnover.
   - Energy, Utilities & Resources: Highest alignment percentage on economic activities.
   - Automotive: Highest eligibility percentage.
6. **Reference to EU Guidelines**: Very few companies explicitly refer to the European Commission's December FAQs.
7. **Comparative Figures**: Only 10% of the companies disclosed comparative figures from previous years.
8. **Data Challenges**: Non-financial companies face significant issues due to data availability and clarity regarding methodologies, especially for alignment criteria.

Annex 2: Risk Management

Table A2.1: Overview of the Policies and Measures Linked to Risk Management in the Analysed Member States

Country	Policies and Measures Across the Analysed Member States
Austria	• Climate risk management is high on the agenda for the Ministry for Climate Action. They facilitated a national stakeholder dialogue to facilitate enhanced transparency of information. • An online platform "HORA"[214] has been initiated by the government to help assess and integrate natural hazards and other physical risks into strategy. At present, it is currently voluntarily used. • Initiatives by the FMA: – Introduced the national implementation of the PACTA report[215] on climate risks in Austria. – Regularly conducts stress tests to analyse the risks and vulnerabilities of the insurance sector pertaining to the current economic climate and for assessing the risk capacity of individual insurance undertakings[216]. By these means, the FMA successfully examines the impacts of future climate policy, advent of low-carbon technologies, economy's level of adaptation or occurrence of extreme events. – 2019 – Asset screening: The FMA has been conducting analyses of transitional risks in investment to identify assets that could potentially be exposed to higher price fluctuation during transition towards a carbon-neutral economy.[217] The shares and corporate bond portfolios are valued and analysed under different transition scenarios to identify the extent of investment that insurers must do to reduce carbon emissions to align with Paris objectives[218]. – 2020 – Guide for managing sustainability risks: Published the "FMA Guide for Managing Sustainability Risks" with the Österreichische Nationalbank to help establish a mutual understanding between the FMA and the supervised companies and to ensure a level playing field. It is available to banks, insurance companies, asset managers, pension funds, and company retirement funds as a cross-sector source of information[219]. – 2020 – Impact underwriting: The FMA has focused on integrating ESG topics into the underwriting of products with a forward-looking price structure, promotion of risk mitigating behaviour and risk advice for preventive purposes[220].
France	• The Ministry for the Economy, Finance and Recovery engages with the banking and financial services industry on accelerating green and resilient investments and build on existing efforts to green the financial system. • 2015 - Article 173-Provision VI Energy Transition Law[221]: – Applies to two key components of the investment process: asset management companies and institutional investors. The regulation concerns all asset classes: listed assets, venture capital, bonds, physical assets, etc. It presents a series of

[214] See https://hora.gv.at/.
[215] See https://2degrees-investing.org/resource/pacta-cop-austria/.
[216] See https://www.fma.gv.at/en/insurance/sustainable-finance/.
[217] See https://www.fma.gv.at/en/insurance/sustainable-finance/.
[218] See https://www.fma.gv.at/en/insurance/sustainable-finance/.
[219] See https://www.bmk.gv.at/en/green-finance/finances/climate-risk-management.html.
[220] See https://www.fma.gv.at/en/insurance/sustainable-finance/.
[221] See https://www.greenfinanceplatform.org/policies-and-regulations/article-173-vi-investors-and-article-173-iv-companies-frances-law-energy.

	measures aimed specifically at banks to report on the implementation of regular stress tests representative of the risks associated with climate. – Requires institutional investors and companies to provide information on the way that they consider climate change as well as ESG factors into their strategies and decision making - both how investments could impact climate/ESG factors and how these factors could impact investments (i.e., double materiality approach). It imposes on institutional investors a new detailed reporting on both their exposure to climate-related risks and their efforts to mitigate climate change. • 2017 – Adhesion of Banque de France and Autorité de contrôle prudentiel et de résolution to the Network for Greening the Financial System[222]: Participation in the network of central banks and supervisory bodies to speed up the consideration of climate issues in financial supervision, to deepen cooperation on climate change risk management and to mobilize tools to accelerate financing for the energy and ecological transition. • Amendments to the monetary and financial code[223]. • 2021 – Disclosure of biodiversity and climate-related risks - Decree n°2021-663 pursuant to Article L. 533-22-1 • Financial Code[224]: Requirement for all financial institutions to disclose biodiversity-related risks and climate-related risks, using the concept of double materiality. Financial institutions will also have to disclose their strategy for reducing biodiversity impacts. They must include specific targets and a measure of alignment with international biodiversity goals.
Ireland	• The Central Bank has established a Climate Change Unit to embed climate risk into supervisory and financial stability assessments, aimed at ensuring consistency and cohesion in the approach across the bank and accounting for climate risks and considerations in the daily supervisory work.[225]. The Central Bank is also actively engaging at the domestic and regional levels with the European Supervisory Authorities (ESAs) and the ECB on developing prudential and regulatory frameworks for the broader financial sector. • Sustainable Finance Ireland was names as an Observer to the newly established Climate Risk and Sustainable Finance Forum, hosted by the Central Bank of Ireland in 2022. The forum was established to develop a shared approach to the understanding and management of the risks and opportunities posed by climate change to the financial system and falls in line with Pillar 4 of the Sustainable Finance Roadmap which deals with enabling an environment to underpin the growth of sustainable finance. Its membership comprises members of the Irish-located financial community as well as climate change experts, representative bodies, and representatives from the Central Bank. The Forum will meet bi-annually[226]. • There is a high level of integration of sustainability risks into the investment process (78%)[227], additionally, 17% of the total funds offered in Ireland are categorized as ESG funds under Article 8 or 9[228]. • There is a National Biodiversity Action Plan driving national expenditure.

[222] See https://www.banque-france.fr/en/financial-stability/international-role/network-greening-financial-system.
[223] See https://www.legifrance.gouv.fr/codes/section_lc/LEGITEXT000006072026/LEGISCTA000006154718/.
[224] See the complete legislative decree at: https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000043541738.
[225] See https://www.centralbank.ie/news-media/press-releases/press-release-central-bank-sets-out-supervisory-expectations-of-regulated-firms-regarding-climate-change-and-reaffirms-own-commitment-to-take-action-03-november-2021.
[226] See https://pwceur.sharepoint.com/:x:/r/sites/CZ-ADV-CZ-ESG-Advisory/_layouts/15/Doc.aspx?sourcedoc=%7B11CCACBD-50F7-4C9B-9891-FB370C74439A%7D&file=Country%20updates.xlsx&action=default&mobileredirect=true.
[227] See https://www.sustainablefinance.ie/wp-content/uploads/2021/06/Roadmap-Reports-Executive-Summary.pdf.
[228] See https://www.sustainablefinance.ie/wp-content/uploads/2021/06/Roadmap-Reports-Executive-Summary.pdf.

	• The Revision of the SFR planned for the end of 2023 should include biodiversity finance[229].
Italy	• Both EU Directives on integrating sustainability factors for institutional investors have been transposed by Italy – IORP II Directive by Legislative Decree 147/2018 aimed at pension operators[230] and SRD II Directive amending Directive 2007/36/EC within the Italian framework by Legislative Decree n. 49/2019[231]. aimed to foster dialogue between issuers on corporate policies. These regulations require entities to declare if they account for ESG issues in their investment and risk management, alternatively, entities like pension providers should fulfil the “comply or explain” principle to justify their inaction. • Initiatives by Italy's Institute for the Supervision of Insurance (Italian Istituto per la vigilanza sulle assicurazioni, or IVASS). • Conducted confidential requests for qualitative information on investment and underwriting practices, quantitative data on natural catastrophe claim settlements, and incentives/disincentives for considering market and natural catastrophe risks in Solvency II at the national and European levels. • Introduced provisions in Regulation No. 38/2018 underlining the importance of social and environmental factors in the activities of insurance undertakings. Specifically, Article 47 (2, b) specifies that undertakings may introduce remuneration systems, for the variable component, based on non-financial indicators such as social and/or environmental performance.
Lithuania	• The Bank of Lithuania intends to prioritise sustainability as one of the institution’s strategic objectives to strengthen the financial system resilience of Lithuania and the management of climate-related risks as well as develop sustainable internal operations[232]. • The pan-Baltic capital market coalition with Estonia and Latvia can deepen regional integration and strengthen resilience with greater transparency of climate-related risks[233].
Germany	• BaFin developed progressive guidelines and has also done pioneering work in this area[234]. BaFin is also a member of the steering committee of the NGFS, the expert groups on climate-related financial market risks set up by the standard setters and one is one of the three ESAs. • The Act on Corporate Due Diligence Obligations in Supply Chains (Gesetz über die unternehmerischen Sorgfaltspflichten in Lieferketten) has come into force on January 1, 2023, which also includes corporate due diligence obligations in relation to financial services. The law obliges large companies based in Germany to better fulfil their responsibility to respect internationally recognized human rights in supply chains by implementing human rights due diligence measures[235]. • In July 2023, the German government adopted the draft of the climate adaptation law submitted by the Federal Environment Ministry. The law creates the first strategic framework for precautionary climate adaptation on all administrative levels in Germany. Parallel to the legislative process for the climate adaptation law and the development of

[229] See https://assets.gov.ie/269866/e6a2d7f2-d3d5-4d01-ae46-9eb3e2f80dbf.pdf.
[230] The Legislative Decree entered into force on January 1st, 2019, and was published on the “GAzzetta Ufficiale”: https://www.gazzettaufficiale.it/eli/id/2019/01/17/19G00005/sg.
[231] The Legislative Decree entered into force on January 1st, 2019, and was published on the “GAzzetta Ufficiale”: https://www.gazzettaufficiale.it/eli/id/2019/01/17/19G00005/sg.
[232] See https://www.lb.lt/en/news/bank-of-lithuania-to-contribute-to-the-development-of-green-finance-and-climate-related-risk-management.
[233] See https://eca.europa.eu/en/Pages/Financial-markets-conference.aspx.
[234] BaFin, Guidance Notice on Dealing with Sustainability Risks, https://www.bafin.de/SharedDocs/Downloads/EN/Merkblatt/dl_mb_Nachhaltigkeitsrisiken_en.html; jsessionid= 0715DC05EA0CE85CCDB482E22E9EC4F1.1_cid500.
[235] See https://www.csr-in-deutschland.de/EN/Business-Human-Rights/Supply-Chain-Act/supply-chain-act.html.

	the climate adaptation strategy, the German federal and Länder governments are discussing at the Conference of Environment Ministers how long-term, reliable financing of climate adaptation measures could be structured[236]. • In addition to the law, the Federal Environment Ministry supports the Länder and municipalities in drawing up climate adaptation strategies through its own funding programmes and the Zentrum KlimaAnpassung[237].
Netherlands	• The DNB oversees the financial sector's management of climate-related and environmental risks. DNB's Sustainable Finance Platform includes the Dutch financial sector, government, and supervisory authorities, The Dutch AFM ensures fair and transparent financial markets, supervising the reporting of sustainable developments and enforcing adherence to sustainability principles. • Netherlands' approach to managing climate change and environmental degradation risks focuses on both physical factors and transition risks associated with moving towards a low-carbon, sustainable economy[238]. Their strategies emphasize integrating climate and environmental risks into business models and strategies, using tools such as stress tests and scenario analyses for risk assessment. Regular adjustments to risk management cycles, establishment of specific performance indicators, and monitoring and reporting mechanisms are key components of this approach. • Dutch institutions are developing robust data infrastructures to identify and report climate and environmental risks, aligning with emerging standards like the European CSRD and the ESRS[239]. Institutions covered by the rules must include information on the effects of ESG factors in their external reporting, including ESG information on strategy, governance and business model, materiality analysis, risks and opportunities, and performance indicators. These standards also mention data indicators to measure climate and environmental risks. Institutions are advised to align their data needs as closely as possible with these EU reporting standards.

[236] See https://www.bmuv.de/en/pressrelease/german-government-adopts-first-nationwide-climate-adaptation-law.
[237] See https://zentrum-klimaanpassung.de/.
[238] Section 3:17 of the Financial Supervision Act (Wet op het financieel toezicht – Wft) and Section 143 of the Pensions Act (Pensioenwet – Pw), Dutch financial undertakings and pension funds respectively are obliged to have sound and ethical operational management. In addition, more detailed specific regulations are in force for various sectors regarding the management of prudential risks.
[239] https://www.oecd-ilibrary.org/sites/e32461f6-en/index.html?itemId=/content/component/e32461f6-en.

Annex 3: Capital Supply & Allocation: Innovative Financial Products

Table A3.1: Overview of the Capital Supply and Allocation Measures Identified in the Analysed Member States

Country	Policies and Measures Across the Analysed Member States
Austria	• 2018 – Vienna Stock Exchange's Green and Social Bonds Platform: The Vienna Stock Exchange launched a platform for "green" securities for Austrian and international issuers. The admission criteria for green and social bonds are following the Green Bonds Principles of ICMA. To ensure that the planned use of the proceeds is adhered to, an external audit is carried out by independent institutions (second party opinion/certification/rating) in accordance with international standards – including the Green Bond Principles. Continuous disclosure and publication of the use of proceeds shall enable investors to make a qualified investment decision. • 2022 – Austria issued inaugural green bond: In May 2022, the Republic of Austria issued its first green bond on the Vienna Stock Exchange, with a coupon of 1.85% matures on May 23, 2049. It was valued at EUR 4 billion with oversubscription of EUR 25.4 billion, of which 70% were green investors. Over EUR 5 billion of public expenditure was identified to be financed by the green bond programme in 2021 and 2022, and over EUR 1.5 million is dedicated for clean transportation[240]. • OeKB's Exportinvest green instrument for businesses: OeKB is a specialist credit institution owned by Austrian commercial banks, with mandates from the Republic of Austria. The instrument offers low-cost refinancing of OeKB for domestic products that facilitate or expand their export business and generate local value-add[241]. With the addition of the "green" component, organisations can refinance up to 100% of their investment. Suitable projects will also be eligible for additional support like grants under the federal/provincial environmental protection programs[242]. • The European Investment Fund (EIF) and UniCredit Bank Austria AG have entered into a guarantee ceiling agreement for EUR 90 million to support SMEs and mid-caps investing in sustainability, innovation, and digitalization, offering exceptionally favourable terms. • The market has seen a steady rise in the issuance of green bonds over recent years, with these instruments becoming pivotal for financing. This trend is underlined by the Republic of Austria's landmark move in May 2022 when it issued its inaugural green bond. Presently, the Vienna Stock Exchange lists 74 green and social bonds, underscoring the growing importance of these financial tools. However, it is worth noting that social bonds have not yet carved out a significant market share in Austria. • Moreover, 2021 marked a noteworthy year for sustainable finance in Austria with the introduction of the country's first sustainability-linked bonds by firms like UBM and VERBUND. This trend is poised for further growth, especially since the Sustainability-linked Bond Principles provide issuers and investors with clearer directions. Austria's move mirrors a global shift, where sustainability-linked bonds are increasingly dominating the bonds market. • Several factors are driving the adoption of these sustainable financial instruments in Austria. The rising demand from retail investors, an opportunity to expand the issuer's investor base, ensuring compliance with investor guidelines, and the allure of reputational gains for both investors and issuers are among the top motivators. Additionally, there are pricing benefits and specific legal incentives, such as exemptions for companies collaborating towards an ecologically sustainable or climate-neutral economy from cartel prohibitions.

[240] See https://www.klimaaktiv.at/partner/Kooperationsformen/green_investment_pioneers.html.
[241] See https://www.bankaustria.at/en/corporate-customers-exportinvest-green.jsp.
[242] See https://www.bankaustria.at/en/corporate-customers-exportinvest-green.jsp.

	• Reverting attention to assurance and verification procedures for green bonds, it is essential to understand that the EU currently lacks a regulatory framework for these processes. However, there has been a development on this front; the EU Commission proposed a European Green Bond Standard (EUGBS) in July 2021, which was subsequently approved and published on November 30, 2023[243]. This framework aims to establish a voluntary gold standard for green bonds, with the overarching goal of countering greenwashing and ensuring genuine environmental projects secure the necessary financing. Key stipulations of this proposal include strict adherence to the EU Taxonomy for bond funds, transparent reporting on bond proceeds allocations, a mandatory external review for bond and project compliance, and a requirement for external reviewers to register with the ESMA.
France	• 2022 – Responsible investment charter – Banque de France[244]: responsible investment charter with attendant commitments and actions. The approach applies to its own funds and pension liabilities investment portfolios excluding those it holds in the framework of the monetary tasks entrusted to the Eurosystem, through 3 commitments: – Enhance the Inclusion of ESG factors in investment decisions. – Improve the measures and the development of the contributions of asset portfolios to the environmental transition. – Report on the progress made in reaching objectives and replicate the best practices of other institutional investors. • 2017 – First green bond issuance (7 billion) by Agence France Trésor - Green OAT (green treasury bond) Framework Document[245]: first green sovereign bond, the green OAT 1.75% June 25, 2039, for EUR 7 billion. France's green bonds target spending from the state budget and the Programme d'Investissements d'Avenir on combating climate change, adapting to climate change, protecting biodiversity, and fighting pollution. The funds raised are treated like those of a traditional OAT and managed according to the principle of budgetary universality. However, they are backed by an equivalent amount of eligible green expenditure, the envelope of which therefore limits the possibilities of issuing green OATs in the year in question. Since 2017, the Green OAT Assessment Council defines the terms of reference and programs environmental impact assessment reports of eligible green expenditures backed by French green sovereign bonds. It also gives its opinion on the quality of the impact assessment reports and the relevance of the results[246]. • 2021 – Second green bond issuance (7 billion) by Agence France Trésor[247]: The green OAT 0.50% June 25, 2044, was emitted for an amount of EUR 7 billion, thus equalling the level reached during the inaugural issue of the first green OAT. • 2022 – Third green bond issuance, the OAT€i Green indexed to inflation (4 billion) by Agence France Trésor[248]: The green OAT€i 0.10% 25 juillet 2038 was emitted for an amount of EUR 4 billion. • Green OAT in 2023 – the Government announced EUR 11 billion for eligible green expenditures. The expansion of three existing green bond types, including OAT 2039, OAT 2044, and OAT €i 2038, remains subject to market demand within the set limits of eligible green expenditure. Detailed monitoring and reporting on the environmental impact

[243] See https://eur-lex.europa.eu/eli/reg/2023/2631.
[244] See the complete charter at: https://www.banque-france.fr/sites/default/files/media/2022/09/28/charte-d-investissement-responsable_en.pdf.
[245] See the complete framework at: https://www.aft.gouv.fr/files/medias-aft/3_Dette/2_Framework_FR_cadre%20OAT%20Verte%20130117.pdf.
[246] See https://www.aft.gouv.fr/fr/oat-verte#consei.
[247] See https://www.aft.gouv.fr/fr/oat-verte.
[248] See https://www.aft.gouv.fr/fr/publications/communiques-presse/24052022-creation-dune-oateui-verte-indexee-sur-linflation.

	of these expenditures continue, overseen by the Green OAT Assessment Council, reflecting France's commitment to transparent and impactful sustainable financing[249].
Ireland	• 2018 – Sovereign green bond issuance[250]: The first Irish sovereign green bond came to market in 2018, with an issuance size of EUR 3 billion and a 2031 maturity. Subsequent taps of this bond in 2019 and 2020 raised an additional EUR 2 billion and EUR 1 billion respectively. This issuance had the stated purpose of funding eligible green projects. The National Treasury Management Agency´s (NTMA) "Irish Sovereign Green Bond Framework" underpins its activity in this space, while the agency publishes an annual "Allocation Report", and in 2020, the NTMA published its first "Impact Report". In January 2023, the NTMA raised EUR 3.5 billion through the syndicated sale of a new 20-year Irish Sovereign Green Bond maturing in October 2043. The funds were raised at a yield of 3.106%. This is Ireland's second sovereign green bond[251]. • 2021 – Ireland Sustainable Finance Roadmap[252]: Establish an innovation program will be set-up to support the financial industry develop new sustainable finance instruments, products, and services, which will be developed in partnership with the industry and envisaged activities include for example an international scoping exercise to identify emerging best practices; and the establishment of a dedicated Accelerator program. The program is expected to extend to nature-related and biodiversity financing activities. • 2022 - Sustainable Fintech Strategy[253]: Overseen by Sustainable Finance Ireland and the Fintech and Payments association of Ireland, the Sustainable Finance Fintech Strategy has been developed in collaboration with stakeholders across financial services, fintech, academia and government to leverage Ireland's existing strength in financial technology to support the transition to a more sustainable economy[254]. A digital flagship program with an Open-Source Data Taxonomy based on global ESG and sustainability standards is to be launched. In October 2022, the Sustainable Finance Fintech Strategy was published. The Fintech strategy[255] outlines five key pillars through which the fintech sector can develop a comprehensive response to sustainability demands. The strategy has 5 pillars: 1) Nurturing the ecosystem, 2) Enabling environment, 3) Capability and talent, 4) Access to capital, 5) Data.
Italy	• 2012 – Minibond market: Minibonds are medium/long term debt instruments for SMEs intended to development plans, such extraordinary investment transactions, and/or refinancing. The regulatory framework for minibonds includes: (i) Law Decree No. 83 of June 22, 2012[256] ("Development Decree") and subsequent amendments by Decree Law No. 179 of October 18, 2012[257] ("Development Bis Decree"); (ii) Decree Law No. 145 of December 23, 2013[258] ("Destinazione Italia" plan); (iii) and Decree Law No. 91 of June 24,

[249] See https://www.aft.gouv.fr/fr/publications/communiques-presse/23012023-oat-vertes-annonce-montant-depenses-vertes-eligibles-pour.
[250] See https://www.centralbank.ie/statistics/statistical-publications/behind-the-data/green-bonds-a-snapshot-of-global-issuance-and-irish-securities-holdings.
[251] See https://www.ntma.ie/news/ireland-raises-3-5-billion-from-the-sale-of-a-new-20-year-green-bond.
[252] See https://www.sustainablefinance.ie/wp-content/uploads/2021/10/Irish-SusFinance-Roadmap-FINAL-FINAL-OCTOBER-2021.pdf.
[253] See https://www.sustainablefinance.ie/wp-content/uploads/2021/10/Irish-SusFinance-Roadmap-FINAL-FINAL-OCTOBER-2021.pdf.
[254] See https://www.sustainablefinance.ie/2022/10/19/irelands-first-sustainable-finance-strategy-for-the-fintech-sector-launched/.
[255] See https://climatefinanceweek.ie/media/1538/sf_fintech_strategy_08.pdf.
[256] See the complete Legislative Decree at: https://www.gazzettaufficiale.it/eli/id/2012/08/11/12A08941/sg.
[257] See the complete Legislative Decree at: https://www.gazzettaufficiale.it/moduli/DL_181012_179.pdf.
[258] See the complete Legislative Decree at: https://www.gazzettaufficiale.it/eli/id/2013/12/23/13G00189/sg.

2014[259] ("Competitiveness Decree"). Given the gradual spread of minibond, Borsa Italiana has created a professional segment of the ExtraMOT[260] market where the relevant debt securities can be traded, which is called ExtraMOT PRO. The development of green minibonds for SMEs, should then be implemented within the already existing minibonds regulations. In this growing market, there is a recognized “green potential”. Indeed, also in the minibond market, the green segment is gaining significant traction for a variety of reasons: (i) the strategic importance of the energy sector, especially after the 2015 Paris Agreement; (ii) the existence of actual assets; (iii) the low degree of correlation with the standard stock market; and (iv) an overall low risk and steady and predictable liquidity flows[261]. In 2014, Enna Energia S.r.l. issued on the ExtraMOT PRO Market the first Italian mini-green bond worth EUR 3.2 million.

- 2021 – Sovereign Green Bond issuance: In March 2021, the Republic of Italy issued an inaugural EUR 8.5bn 24-year green Buoni del Tesoro Poliennali. The sovereign bond follows the “Framework for the Issuance of Sovereign Green Bonds”[262] issued by the Ministero dell'Economia e delle Finanze in February 2021.
- 2021 – Green Guarantee Scheme (GGS)[263]: managed by SACE, and backed by an Italian Government guarantee, the GGS seeks to finance the sustainable transition of the Italian economy’s, through the integration of low-emission technologies into the manufacturing sector to produce sustainable goods and services, e.g., promoting the transition to low emission mobility and other activities aligned with the EU Taxonomy. The GGS started in December 2020 with a budget provided by law equal to EUR 470 million for each of 2020 and 2021.
- 2021 – “Regulatory Sandbox”: MEF issued the Decree April 30, n. 100, which has been officially entered into force on July 17, 2021, establishing the “Discipline of the FinTech Committee and Experimentation”, i.e., the so-called "Regulatory Sandbox" of FinTech activities. The Regulatory Sandbox is a controlled environment where supervised intermediaries and FinTech operators can test, for a limited period, technologically innovative products and services in the banking, financial and insurance sectors while benefiting from a simplified transitional regime and from a constant dialogue with the competent authorities. The characteristics of the Sandbox are: (i) a maximum duration of eighteen months; (ii) possibility for the applicants to require a waiver from the application of some rules and guidelines issued by the supervisory authorities; (iii) more simplified procedures (always proportionate to the activities to be carried out); (iv) the reduction of timeframes for approval procedures; and, finally, (v) the possibility for the authorities to observe the dynamics of technological development, to gain experience on technological evolution and identify the most appropriate and effective regulatory interventions, limiting the spread of potential risks. The testing will take place in constant dialogue with the supervisory authorities (i.e., Bank of Italy, CONSOB and IVASS).

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[259] See the complete Legislative Decree at: https://www.gazzettaufficiale.it/eli/id/2014/06/24/14G00105/sg.

[260] The Italian Stock Exchange has two main markets that allow the electronic trading of bank and corporate bonds and Italian and foreign government securities: the MOT and ExtraMOT segment. The above mentioned ExtraMOT segment, which has been active since 2009, is a multilateral trading system for corporate bonds issued by Italian and foreign companies which are already listed on other regulated markets in the EU.

[261] See the report “Financing the Future: Report of the Italian National Dialogue on Sustainable Finance", December 2016. https://www.mite.gov.it/sites/default/files/archivio/notizie/report_financing_the_future_en_2.pdf.

[262] See https://www.mef.gov.it/en/focus/documents/btp_green/Green-Bond-FrameWork_ENG-.pdf.

[263] See https://www.sace.it/en/about-us/our-commitment/sace-for-the-green-new-deal.

Lithuania	• 2018 – First sovereign green bond emissions: First green bond issued for an amount of EUR 20 million with a 10 Year longevity to finance a loan to Lithuania's Public Investment Development Agency to fund renovations to improve energy efficiency and reduce heating costs in 156 multi-apartment buildings. Lithuania is one of the leading countries to have issued green bonds – it was the first in the Baltics, the third in Europe and the seventh in the world. There are multiple initiatives to green budgets and develop capacities to identify eligible green expenditures through the budget planning process, which would facilitate the issuance of green bonds. • 2020 – State aid fund for business[264]: invest public and private funds in medium and large enterprises affected by Covid-19. One of the objectives is to focus on green and sustainable investment. • Moreover, the new European Union Funds' Investment Program for 2021-2027 provides almost EUR 7.8 billion for Lithuania, of which even EUR 2.6 billion will be allocated to the green transition.[265]
Germany	• On September 2, 2020, Germany successfully issued its first green bond, with a volume of EUR 6.5bn. Since then, the Government issued additional bonds with maturities of 5, 10 or 30 years. In 2022, the government issued Green German Federal securities worth EUR 14.5bn. Every green Federal security has a twin bond - a classic (conventional) Federal security with very similar characteristics[266]. • The German Nuclear Waste Management Fund (KENFO) invests the funds transferred to it – approximately EUR 24bn – in various investment segments to use capital assets and financial income to cover the disposal costs that will be incurred by the German government in the coming decades. In doing so, KENFO is pursuing a return-oriented investment approach that already integrates ESG sustainability[267]. • Within the scope of its budget authority, the German government will bear costs and risks totalling EUR 10bn for an emerging technologies investment fund at KfW. This Future Fund (Zukunftsfonds) will not make investments on its own, but rather with private venture capital partners. With the Future Fund, the German government is helping to ensure that start-ups in the environmental and social sectors can benefit from additional financial resources provided by the Future Fund and its financing partners, particularly in their capital-intensive start-up phase[268]. • The German government will give even more explicit consideration to sustainability aspects in its federal credit guarantees, in line with the 17 SDGs. This will be done by including sustainability aspects to a greater extent when considering economic viability and economic eligibility for funding. In future, a separate "sustainability" criterion will be included when assessing economic eligibility. The German government will coordinate with the Länder on this issue given that parallel federal-state guarantees are involved[269].
Netherlands	• In May 2019, the Netherlands became the first AAA rated sovereign issuer to issue a green bond. Dutch companies (both financial holding companies and non-financial corporations) and the government are the leading issuers of green bonds as a share of total outstanding debt. Non-financial corporations are particularly active, issuing 17.1% of their total debt as green bonds. The bond was certified by CBI as meeting their Climate Bonds Standard, based on a pre-issuance verification letter by verifier Sustainalytics.

[264] See https://www.sorainen.com/deals/aid-fund-for-business-starts-operating-in-lithuania/.
[265] See https://finmin.lrv.lt/en/news/new-plan-for-development-of-green-finance-in-lithuania-public-consultations-begin.
[266] See www.deutsche-finanzagentur.de/ en/institutional-investors/federal-securities/ green-federal-securities/.
[267] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[268] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.
[269] See https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Press_Room/Publications/Brochures/sustainable-finance-strategy.pdf?__blob=publicationFile&v=8.

- The Green Funds Scheme (1995) is managed collaboratively by the Ministries of Housing, Spatial Planning and Environment, Agriculture, Nature and Food Quality, Transport, Public Works and Water Management, and Finance. The Scheme comprises a Green Project Scheme (which sets the conditions for a project to be considered green) and a Green Institution Scheme (which regulates the role played by financial institutions), plus a tax incentive for individual investors.
- The Green Mortgage Scheme - Residential building energy performance standards: The National Energy Act (2013) and the Energy Agenda (2016), Purchases of new houses or renovations by owner-occupiers are eligible for green certificates if energy-saving measures are implemented and lead to an improvement of the energy index.
- In addition to traditional green projects, the Dutch market is also pioneering in hydrogen energy as part of its sustainability strategy. The 2020 Hydrogen Strategy by the Dutch government emphasizes hydrogen's key role in industrial, transport, and port sectors, aiming for substantial electrolysis capacity by 2030. This forward-looking approach is complemented by financial strategies and products that support investment in hydrogen infrastructure, aligning with the nation's vision for a sustainable, carbon-neutral future. The National Hydrogen Programme (Nationaal Waterstoff Programm) was launched in January 2021.

Annex 4: Stakeholder’s Engagement, Capacity Building & Sustainable Finance Literacy

Table A3.1 Overview of the Capital Supply and Allocation Measures Identified in the Analysed Member States

Country	Policies and Measures Across the Analysed Member States
Austria	• National financial literacy strategy: The Federal Ministry of Finance develops the green financial literacy as part of the national financial literacy strategy. The goal of this strategy is to raise citizens’ awareness, improve their financial competences and understanding in the area of financial literacy. The topic of green finance is anchored as one of three overarching focus areas in the national strategy: “Supporting consumers in making sustainable financial decisions”. This will ensure that knowledge about the connection between financial decisions and climate protection is a fundamental part of this process and is incorporated into the various measures. • 2019 – Focus Group Established to Discuss and Support the Implementation of Austria’s Green Finance Agenda: Austria’s Green Finance Agenda was launched in February 2019, with a kick-off event and the establishment of a green finance focus group made of up the country’s key financial sector players. The main objective of the focus group will be to address the question of how the Austrian financial market can contribute to achieving climate and energy targets. • 2022 – Launch of the Green Finance Alliance[270]: By establishing the Green Finance Alliance, the Ministry for Climate Action has launched an initiative that supports financial companies on their pathway towards achieving climate neutrality. Thereby, Austria takes an important step towards the implementation of the climate protection objectives, as defined in the Paris Agreement, for firms from the financial sector. The Green Finance Alliance is among the first global government-backed initiatives, which calls on financial companies to make a voluntary yet binding pledge to align their portfolios with the 1.5-degree climate target set by the Paris Agreement. • The European Commission has shown support for Austria's national strategy on financial literacy by aiding in its implementation. This strategy, which includes a high-level document and a detailed roadmap, aims to elevate the financial literacy levels among Austrian citizens. By achieving this, the strategy is poised to contribute to both individual and societal financial stability[271]. • On February 1, 2022, a debate took place highlighting the critical role of stakeholder alignment on sustainability, though not solely focused on Austria. The discourse emphasized that such alignment could significantly benefit organizations by unlocking competitive advantages. This conversation also cast a light on the potential impact this alignment could have on stakeholder engagement initiatives within Austria[272].
France	• Multiple civil society initiatives have emerged to support the training of professionals, politicians and students to climate issues and sustainable finance: The Shift project, Pour un réveil écologique, Reclaim Finance. • The number of chairs and masters dedicated to sustainable finance is growing in universities (as well as the number of post graduate thesis and doctorate thesis).

[270] See https://www.bmk.gv.at/en/green-finance/alliance.html.
[271] See https://www.weforum.org/agenda/2022/02/how-to-strengthen-sustainability-by-engaging-with-stakeholders/#:~:text=How%20stakeholder%20alignment%20on%20sustainability,Human%20Resources%20Officer%2CAccenture%20Peter%20Lacy.
[272] See https://reform-support.ec.europa.eu/publications-0/national-financial-literacy-strategy-austria_en#:~:text=The%20Commission%20supported%20the%20adopting,of%20financial%20literacy%20and.

	• Climate Finance Day is an annual event which unites finance leaders to drive sustainable strategies against climate change, showcasing progress and solutions aligned with the Paris Agreement goals. It is a pivotal event for global finance in advancing climate objectives before climate conferences[273]. • 2016 - Finance for tomorrow[274]: Initiative launched in 2016 by Paris EUROPLACE. The Forum brings together all the private, public, and institutional players in the Paris financial centre who wish to commit to a financial system that is based on a sustainable future and combines long-term investment with consideration of environmental and social challenges. Its objective is to make green and sustainable finance a driving force for the development of the Paris financial centre and to position it as a financial centre of reference on these issues. It brings together more than 80 members who have signed a common charter aimed at redirecting financial flows towards a low-carbon and inclusive economy, in line with the Paris Agreement and the UN SDGs. In 2023, Finance for tomorrow became the Institut de la finance durable to better federate and accelerate the actions undertaken by French financial institutions and companies to achieve the energy and environmental transition. • Observatoire de la finance durable[275]: Ambition to contribute to the transparency, monitoring and evaluation of the progressive transformation of French financial actors.
Ireland	• The Platform on Sustainable Finance conducted a Sustainable finance skills gap report in 2021 to highlight the sustainable finance skills shortage and identify the skills needed. The platform works on the gap between the acknowledgement of climate risk as an issue and addressing the financial materiality aspects to the portfolio. The roadmap sets as a key action the establishment of Ireland as sustainable finance skills hub, built on existing activities. Research indicates there is a growing demand for sustainable finance skills, from regulatory knowledge to data analytics[276] (identified in the roadmap). • In 2022, Report published on sustainable finance talent needs of Irish retail financial services. The analysis is a key output of the Irish SFR talent development pillar, itself an output of Government's Ireland for Finance strategy. The report highlights how education and training in sustainable finance to date has concentrated on the financial and capital markets, such as green bonds, regulatory developments, and sustainable investment funds, with a greater focus on the Irish retail financial services sector talent development a next key step[277]. • In 2023, a new report which analyses ESG knowledge and skillset requirements within the Irish insurance industry recognized talent development and capacity building as critical drivers[278]. • The advanced nature of Ireland's professional development and education on sustainable finance is due to the establishment of the Sustainable Finance Skillnet. Potential improvements include introducing more advanced policies and progressive regulation, developing new public instruments and incentives, and expanding the impact of the sustainable finance skills ecosystem[279]. • Skillnet Ireland and the Technology Ireland ICT Skillnet will create two new programmes, a new MSc in Sustainable Software, and a series of modular pathways for both technologists and business leaders in sustainable software architecture. The programmes will create a new discipline that brings together climatology software, hardware

[273] See https://www.2022.climatefinanceday.com/content/about.
[274] See https://financefortomorrow.com/.
[275] See https://observatoiredelafinancedurable.com/fr/.
[276] See https://www.sustainablefinance.ie/wp-content/uploads/2021/06/Roadmap-Reports-Executive-Summary.pdf.
[277] See https://www.sustainablefinance.ie/2022/11/09/report-published-on-sustainable-finance-talent-needs-of-irish-retail-financial-services-during-cop27-finance-day/.
[278] See https://sfskillnet.sustainablefinance.ie/wp-content/uploads/2023/03/SFS-Insurance-ESG-Skills-Final-07.03.23-2.pdf.
[279] See https://www.sustainablefinance.ie/wp-content/uploads/2021/06/Roadmap-Reports-Executive-Summary.pdf.

	technology, and data centre design by building on the collaboration of our technology and financial services ecosystems. In addition, Chartered Accountants Ireland will review its initial qualification syllabus and revisit its continuing professional development programmes with a special focus on the strategic areas of fintech, sustainable finance, and sustainability disclosure standards[280]. • Key stakeholders in developing the roadmap and action plan include: • Skillnet Ireland – Business support agency of the Government of Ireland responsible for advancing the competitiveness, productivity, and innovation of Irish businesses through expertise-led workforce development. • Sustainable Finance Ireland – A public-private initiative working to position and promote Ireland as a leader in sustainable finance. • UNDP hosted Financial Centres for Sustainability Network – A collective of 39 financial centres working together to achieve the objectives set by Agenda 2030 and the Paris agreement. • Climate Week Ireland – Established in 2017, It is in its fifth year currently, the attracting social media attention and attendees from around the world. • The International Sustainable Finance Centre of Excellence (ISFCOE) is coordinating the delivery of Ireland's National SFR 2022-25. It was launched on the opening day of Climate Finance Week Ireland in 2022. It has been developed by Sustainable Finance Ireland in partnership with Skillnet Ireland, and in collaboration with the UNPD, Department of Finance and international partners[281]. • It has been set up to deliver the skills necessary for the financial services industry to finance a net-zero future. The aim is for the centre to become an international hub from which the finance industry in Ireland will develop its response to sustainability demands. The centre will also play a leading role in research and talent development to respond to sustainability demands and to facilitate Ireland's net zero transition[282].
Italy	• 2016 – National Dialogue on Sustainable Finance: Italy's National Dialogue on Sustainable Finance was established to identify options that would improve the integration of sustainability factors across the country's financial sector. The dialogue identified a growing awareness and increased actions by financial institutions across the banking, capital markets, institutional investment, and insurance sectors. The dialogue also recognized the barriers that prevent the further integration of sustainability factors in the financial sector, including mispricing, short-termism, and low levels of awareness and capability. The dialogue identified 18 specific options, grouped into four areas: policy frameworks, financial innovation, market infrastructure, and knowledge building. • Following this a group was set up including supervisory authorities and the ministry of national energy security to formalize the set-up a sustainable finance platform. Founding members of the Platform are public institutions. Working Groups of the platform for 2023: ESG Data Gaps, Reporting & Capacity Building, Financial Education.
Lithuania	• 2021 – Proposal from the EBRD to establish a Green Finance Institute[283]: • Proposal for the establishment of a Green Finance Institute to ensure the standardization of sustainability requirements and dissemination of relevant information in the country. Also, it would consult and perform an analytical function as well as would support the

[280] See https://assets.gov.ie/269866/e6a2d7f2-d3d5-4d01-ae46-9eb3e2f80dbf.pdf.
[281] See https://www.sustainablefinance.ie/2022/10/17/international-sustainable-finance-centre-of-excellence-officially-launched-in-ireland/.
[282] See https://assets.gov.ie/269866/e6a2d7f2-d3d5-4d01-ae46-9eb3e2f80dbf.pdf.
[283] See https://finmin.lrv.lt/en/news/green-economic-development-in-lithuania-is-gaining-momentum-recommendations-for-lithuanias-sustainable-green-finance-action-plan.

	discussion between the representatives of the public sector, private business and science, and will be involved in delivering green labelling methodology. • Launch of a Working Group by the MoF gathering different public and private financial actors. The Platform follows the work of EBRD. It focuses on identifying most important challenges, most relevant solutions and provide recommendations. • 2022 – Making Green Finance a reality in the Baltics[284]: Conference gathering policy makers from the EU institutions and Member States, particularly from the Baltic region, as well as private sector representatives and academia to discuss the role of the public sector in the new economy and the required developments. • To prepare the Green Finance Action Plan, the MoF established an inter-institutional working group, which included representatives of both the public sector and the financial market. When preparing the plan, the recommendations of the EBRD, the goals of the Eighteenth Government Programme and the National Energy and Climate Action Plan for 2021-2030 related to the green transition of the Lithuanian economy were considered[285].
Germany	• KfW plays a role as a transformative promotional bank for a greenhouse gas-neutral future in line with the Federal Government's mandate. Within the context, six sub-projects are being implemented in parallel with the inclusion of different central units and all market areas: modernized sustainability governance (completed in 2022), expansion of the impact management system, ensuring the 1.5ºC compatibility of KfW's financing activities, even stricter inclusion of ESG risk factors in KfW's risk management and the further development of sustainability related financial reporting. The sixth sub-project is devoted to the implementation of new IT and data solutions for the various sub-projects[286]. • The Federal Ministry of Finance is a founding member of the Coalition of Finance Ministers for Climate Action, and the coalition now has 60 member countries following the addition of the United States and Japan. Its objective is to anchor climate-relevant aspects more firmly in financial policy. To this end, the finance ministers have agreed on six "Helsinki Principles" (Principle 5 relates to sustainable finance). The German government also provides financial support to the CFMCA Secretariat[287]. • Green and Sustainable Finance Cluster Germany - an initiative emerging from the fusion of the Accelerating Sustainable Finance Initiative (Deutsche Börse) and the Green Finance Cluster Frankfurt (Hessian Ministry of Economics). The Cluster, launched in April 2018, aims at bundling activities in the field of sustainable finance to achieve greater use of financial market expertise in sustainability. The Cluster conducts market surveys every two years. Furthermore, it organizes different events, including the Sustainable Finance Summit Germany[288].
Netherlands	• In 2016, DNB set up the Sustainable Finance Platform for raising awareness and implementation of sustainable financing in the financial sector. The Platform is a partnership of DNB (chair), the Dutch Banking Association, the Dutch Association of Insurers, the Federation of the Dutch Pension Funds, the Dutch Fund and Asset Management Association, Invest-NL, the Dutch Authority for the Financial Markets, the Ministry of Finance, the Ministry of Economic Affairs and the Environment and the Sustainable Finance Lab. It operates through working groups divided by themes like climate adaptation, sustainability communication, SDG impact assessment, partnership for carbon accounting, circular economy, and biodiversity[289].

[284] See https://www.eca.europa.eu/en/Pages/green-finance-conference.aspx.
[285] See https://finmin.lrv.lt/en/news/new-plan-for-development-of-green-finance-in-lithuania-public-consultations-begin.
[286] See https://www.kfw.de/microsites/Microsite/nachhaltigkeitsbericht.kfw.de/download/Sustainability-Report-2022.pdf.
[287] See www.financeministersforclimate.org/.
[288] See https://gsfc-germany.com/en/.
[289] See https://www.dnb.nl/en/green-economy/sustainable-finance-platform/.

- DNB co-founded the international NGFS and was the first Central Bank to endorse the UN PRI. The state also launched Invest-NL in 2020, a green investment initiative.
- The Netherlands Authority for Consumers and Markets revised “Sustainability Agreements” Guidelines, which include examples illustrating the opportunities for business collaboration that contributes to a sustainable society have been drawn up. The new draft guidelines are now ready for further discussions about sustainability and competition rules in the European Union.
- Several universities offer master's programs focusing on green finance and ESG. Maastricht University provides a one-year, full-time Master's in Sustainable Finance. Utrecht University offers a Master's in Sustainable Finance and Investments. Additionally, EDHEC Business School has an MSc in Climate Change & Sustainable Finance. These programs indicate the increasing integration of sustainability considerations into financial education and training[290].

[290] See https://curriculum.maastrichtuniversity.nl/education/master/master-international-business-track-sustainable-finance#:~:text=,MSc%20in%20International%20Business.