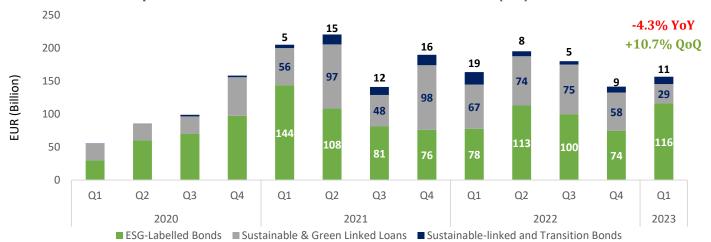


# afme/ Contents Finance for Europe

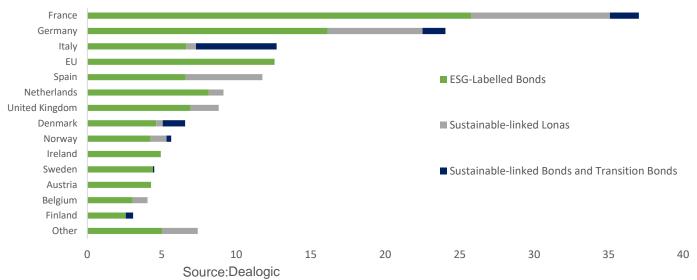
Key Findings	3
Regulatory Update	8
ESG Bond and Loan Issuance	11
ESG Bonds Outstanding	19
Carbon Pricing, Emissions and Trading	23
Fund Management	28
ESG Bond Trading	31
Valuations	34
Methodology and Criteria	41

# afme/ Key findings

### 1.1 European ESG Bond and Loan Issuance 2020-2023 (Q1)



### 1.2 European ESG Bond and Loan Issuance by Country: EURbn (2023 YtD Q1)



In Q1'23, European ESG bond and loan issuance accumulated a total of €156bn in proceeds, declining 4.3% year-on-year (YoY) but increasing 10.7% quarter-on-quarter (QoQ).

ESG bonds and loans include ESG-labelled bonds (proceeds-based), sustainable-linked bonds, transition bonds, green-linked loans and sustainable-linked loans.

The quarterly increase was driven by ESG-labelled bonds, which accumulated €116bn in proceeds, the second-largest quarterly issued amount on records.

French issuers continued to lead in total ESG bond and loan issuance, followed by German issuers.

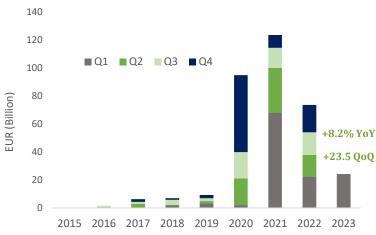
In Q1 2023, ESG Securitisation issuance accumulated €1.1bn in proceeds, an increase of 103.3% compared to the first quarter of 2022, on two green RMBS and one social ABS.

## afme/ Key findings

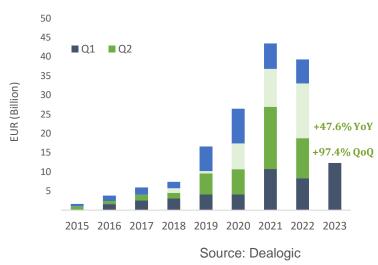
### 1.3 European Green Bond Issuance



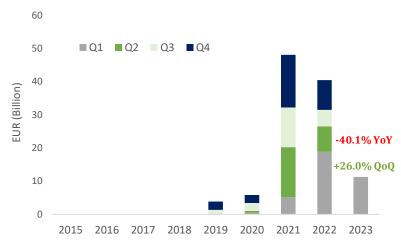
### 1.4 European Social Bond Issuance



### 1.5 European Sustainable Bond Issuance



## 1.6 European Sustainable-linked and transition Bond Issuance



ESG-labelled bond issuance which comprises Green, Social and Sustainable bonds, accumulated €115.9bn in proceeds in Q1 2023.

All ESG-labelled market segments exhibited an annual expansion in Q1 2023:

- Green bond issuance stands out as the ESG sub asset class that has grown the most on an annual basis by 69.6% YoY (63.9% QoQ). The increase was driven by the corporate and supranational sectors, with Germany leading as the top nationality of issuers.
- Social bond issuance increased 8.2% YoY and 23.5% QoQ. We continue to see a strong participation of the French agency CADES as it consolidates as a market leader for social bonds.
- Sustainable bond issuance increased 47.6% YoY and 97.4% QoQ, which shows the largest expansion on a quarterly basis. France and Spain were the top issuers of sustainable bonds in the Europe in Q1 2023.

The sustainable-linked bond market, however, exhibited a large annual decrease of 40.1% YoY but an increase of 26.0% QoQ.



### Top single ESG bond issues by amount in 2023 YtD

Environmental	Amount EUR (bn)	Maturity date	ISIN
Italy	10.0	30 October 2031	IT0005542359
European Union	6.0	04 February 2048	EU000A3K4DM9
European Investment Bank - EIB	4.65	14 February 2033	US298785JV96
Ireland	3.50	18 October 2043	IE000GVLBXU6
KfW	3.00	14 February 2033	XS2586942448
Turkey	2.3	13 July 2030	US900123DJ66
Social	Amount EUR (bn)	Maturity date	ISIN
CADES	5.00	25 May 2028	FR001400F5U5
CADES	4.00	01 March 2030	FR001400G6E6
			US12802D2L94
CADES	3.69	25 January 2026	XS2580310246
BNG	1.50	11 January 2033	XS2573952517
La Banque Postale Home Loan SFH	1.25	31 January 2031	FR001400FD12
Walloon Region	1.00	22 June 2033	BE0002922038
Sustainability	Amount EUR (bn)	Maturity date	ISIN
Agence Francaise de Developpement - AFD	1.50	21 January 2030	FR001400F7C9
Republic of Slovenia	1.25	11 March 2033	SI0002104303
Action Logement Services	1.20	25 May 2043	FR001400FTI1
Autonomous Community of Madrid	1.00	30 April 2033	ES00001010K8
Cyprus	1.00	13 April 2033	XS2610236445
			US683483AA98
OPEC Fund for International Development - OFID	0.92	26 January 2026	XS2578939105

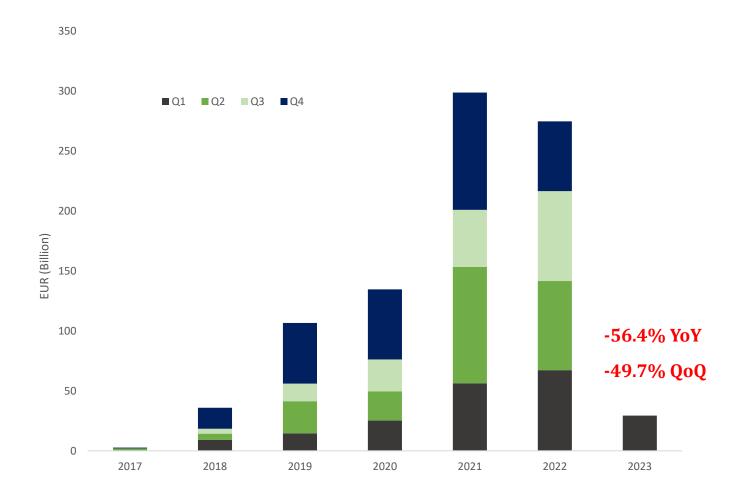
During 2023, the sovereign sector had a significant participation across the green primary market, with the Government of Italy originating the largest single issue with a deal amount of €10 bn.

The European Commission (on behalf of the EU) issued the second-largest green bond of the quarter with a total amount of €6bn. Other important single sovereign issues were originated by the governments of Ireland (€3.5 bn), Turkey (€2.3 bn) and Austria (€1.3 bn).

The French Caisse d'Amortissement de la Dette Sociale (CADES) continues to consolidate as a market leader for social bonds.

# afme/ Key findings

### 1.7 European sustainability-linked and Green-linked Loan Issuance 2017-2023 (Q1)



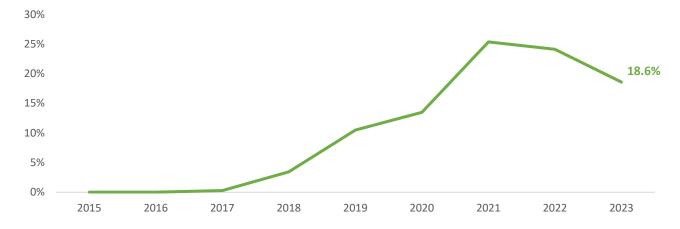
Sustainability-linked and green-linked loan decreased 56.4% to EUR 29.3bn in Q1'23 from EUR 67.2bn in Q1'22, and 49.7% from Q4'22.

## afme/ Key findings

### 1.8 European ESG Bond Issuance as % of Total Bond Issuance



1.9 European Sustainability Linked and Green Loan Issuance as of Syndicated Loan Origination



\*ESG includes Environmental, Social and Sustainable Source: Dealogic

ESG bond issuance, including ESG-labelled, sustainable-linked and transition bonds, represented 17.4% of total European bond issuance during 2023YtD, a lower proportion from 21.3% in 2022 FY and 19.9% in 2021 FY. This was comprised of 10.9% green bonds, 3.3% social bonds, 1.7% sustainable bonds, 1.5% of sustainable-linked and transition bonds [SeeChart1.8]

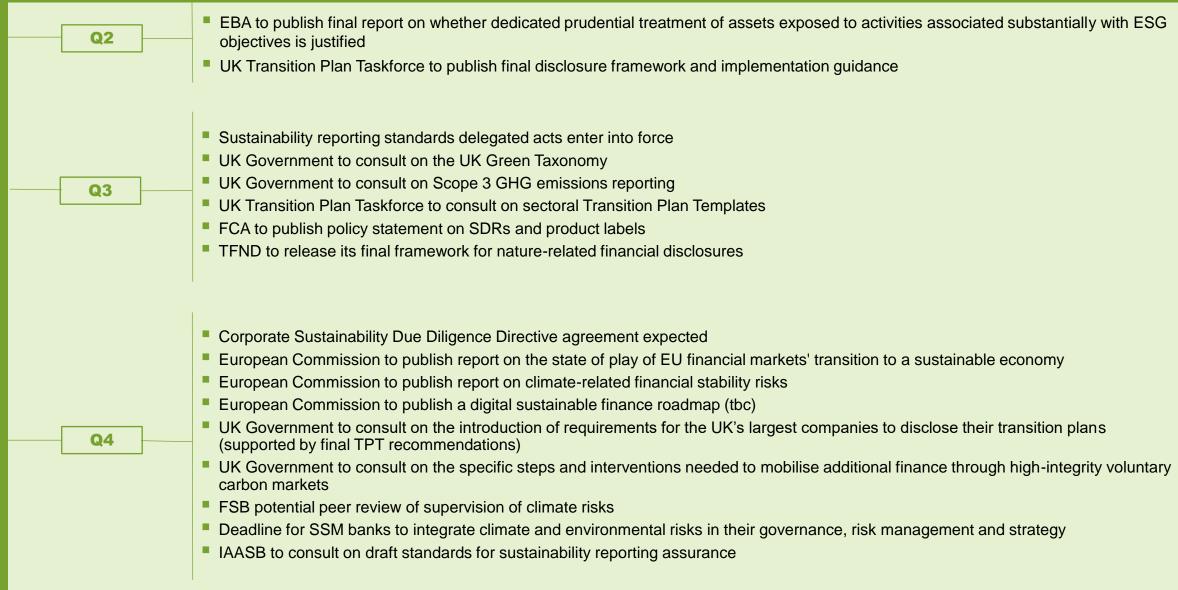
Sustainability-linked and Green-linked loan issuance represented 18.6% of total European syndicated loan origination during Q1'23, down from 24.1% in FY 2022 [SeeChart1.9].



## Regulatory Update

## atme/ Regulatory/Supervisory Snapshot – Sustainable Finance\*





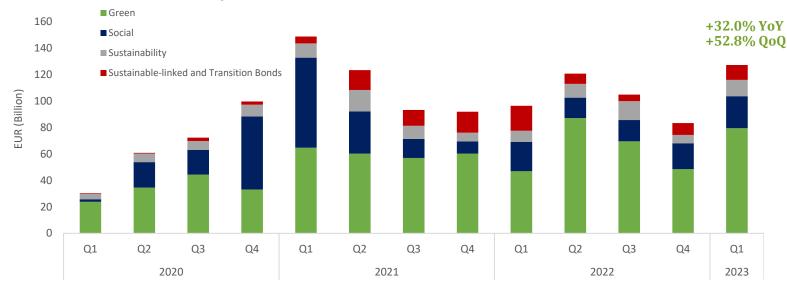


## ESG Bond and Loan Issuance

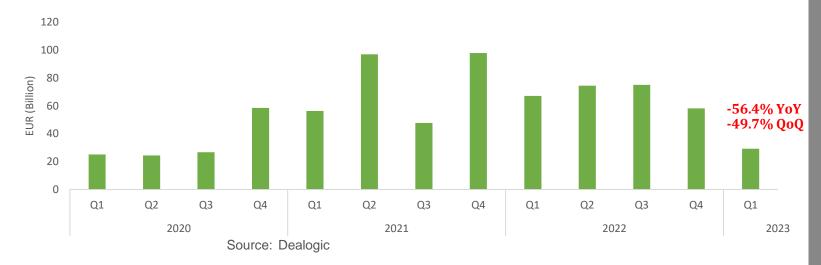


### **ESG Bond and Loan Issuance**

### 2.1 European ESG, sustainable linked, and transition bond issuance



2.2 European sustainability linked and Green linked Loan Issuance

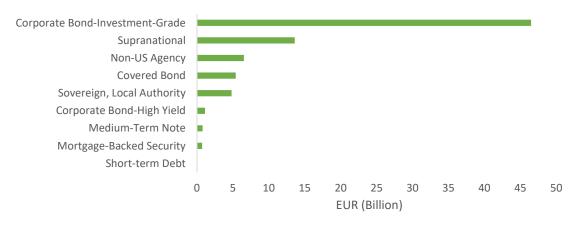


In Q1 2023 ESG, sustainable-linked and transition bond issuance accumulated €127.2bn in proceeds, with an annual and quarterly increase of 32.0% YoY and 52.8% QoQ.

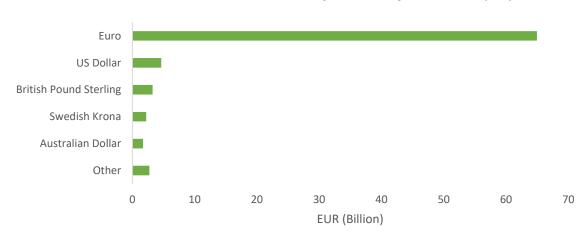
ESG linked loans decreased 49.7% compared to last quarter to EUR 29.3bn and the YoY drop was at 56.4%.

# afme/ Green Bond Issuance

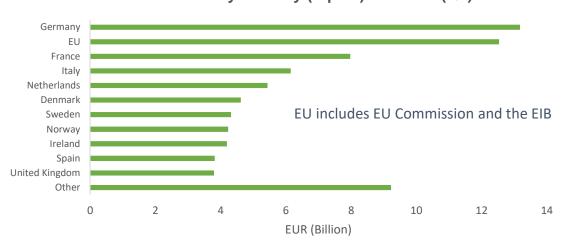
### 2.3 Green Bond Issuance by Deal Type 2023 YtD (Q1)



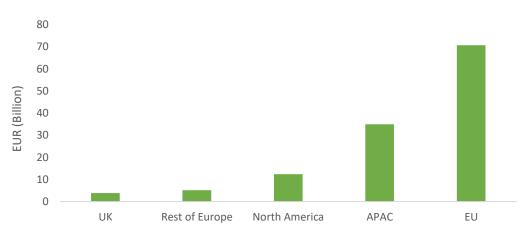
### 2.5 Green Bond issuance by Currency 2023 YtD (Q1)



### 2.4 Green Bond Issuance by Country (top 10) 2023 YtD (Q1)



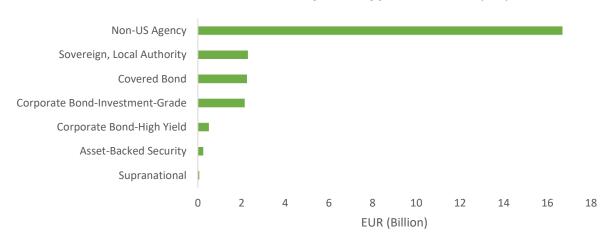
### 2.6 Green Bond Issuance Global Comparison 2023 YtD (Q1)



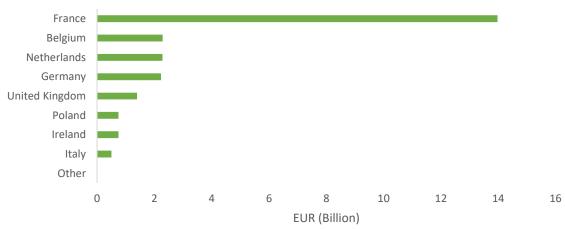
Source: Dealogic

# afme/ Social Bond Issuance

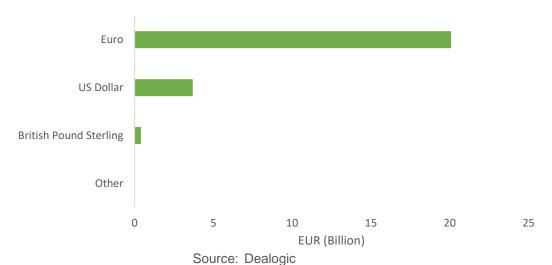
### 2.7 Social Bond Issuance by Deal type: 2023 YtD (Q1)



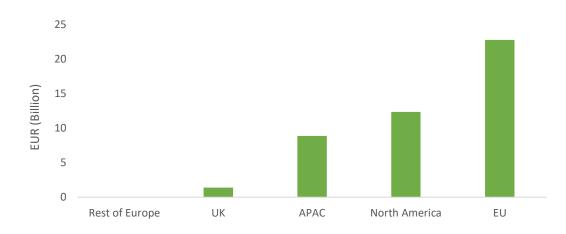
### 2.8 Social Bond Issuance by Country: 2023 YtD (Q1)



### 2.9 Social Bond Issuance by Currency: 2023 YtD (Q1)



### 2.10 Social Bond Issuance Global Comparison: 2023 YtD (Q1)

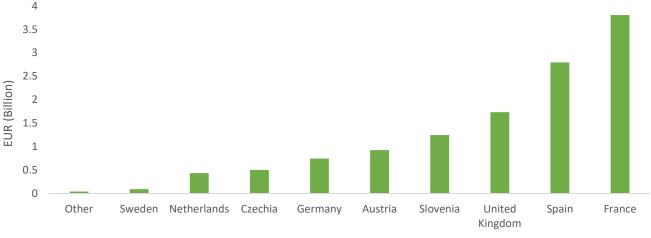




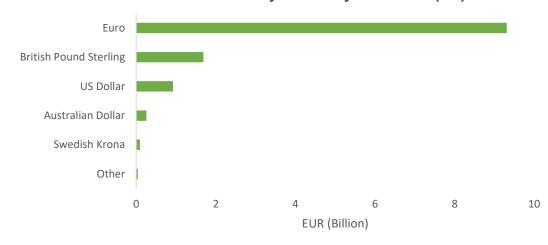
## **Sustainable Bond Issuance**

Proceeds of Sustainable Bonds are allocated between green projects and social projects

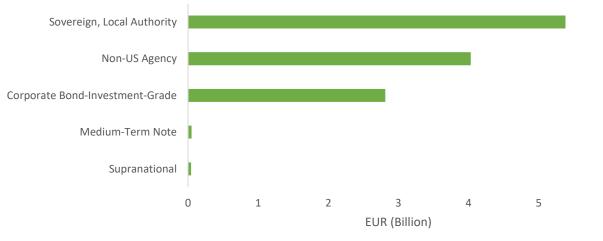




### 2.12 Sustainable Bond Issuance by Currency: 2023 YtD (Q1)

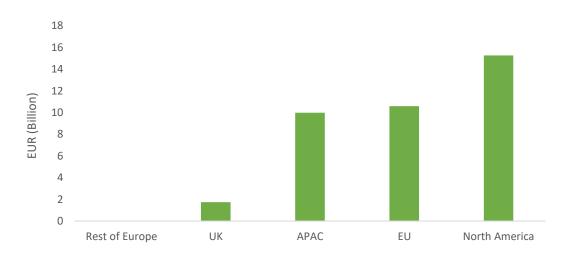


### 2.13 Sustainable Bond Issuance by Deal Type: 2023 YtD (Q1)



### Source: Dealogic

### 2.14 Sustainable Bond Issuance Global Comparison: 2023 YtD (Q1)

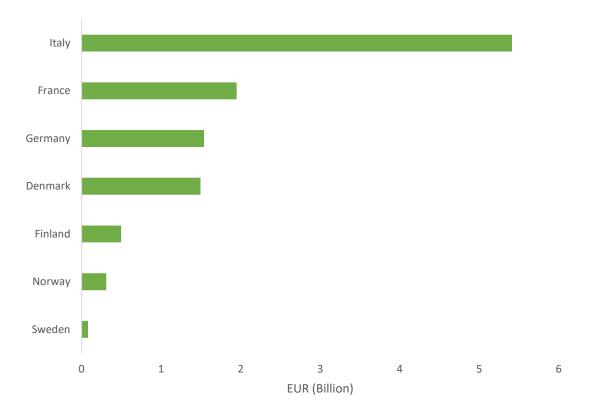




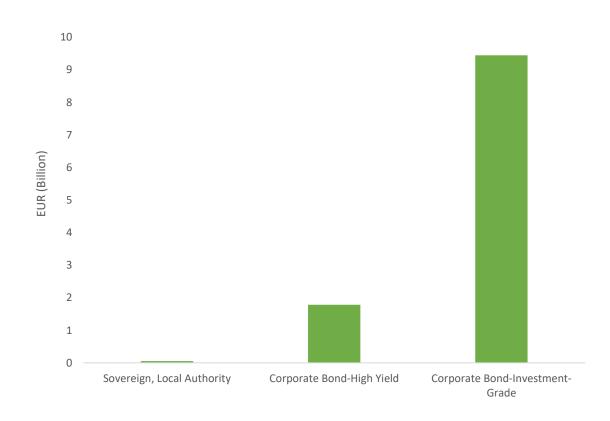
### **Sustainable-linked and Transition Bond Issuance**

Sustainable-linked bonds are performance-based bonds where payment is contingent on pre-determined KPIs which are aligned with sustainability strategies. Transition bonds are brown bonds issued by carbon intensive companies with the intention of starting to green their operations.

2.15 European Sustainable-linked Bonds Issuance by **Country: 2023 YtD (Q1)** 



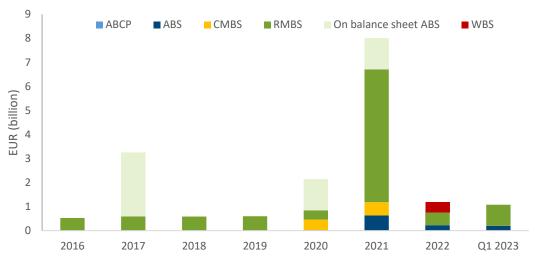
2.16 European Sustainable-linked Bond Issuance by Deal Type: 2023 YtD (Q1)



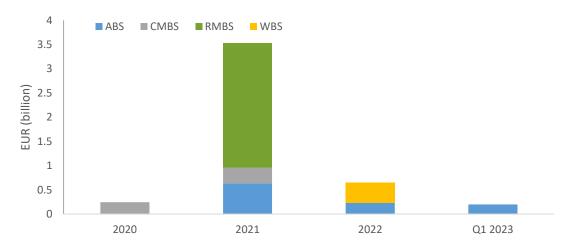
Source: Dealogic

# afme/ ESG Securitisation Issuance

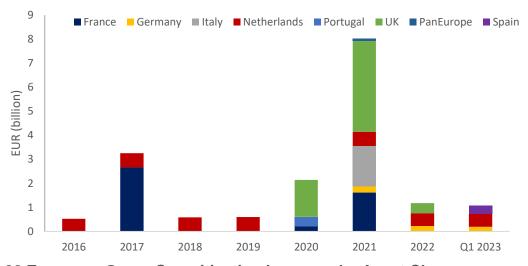
### 2.19 European ESG Securitisation Issuance by Asset Class



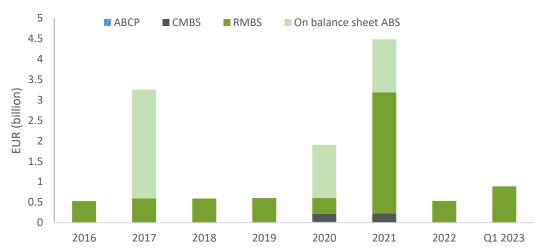
2.21 European Social and Sustainable Securitisation Issuance by Asset Class



2.20 European ESG Securitisation Issuance by Country

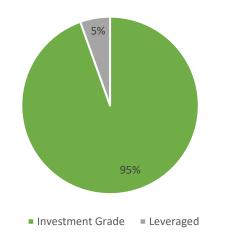


2.22 European Green Securitisation Issuance by Asset Class

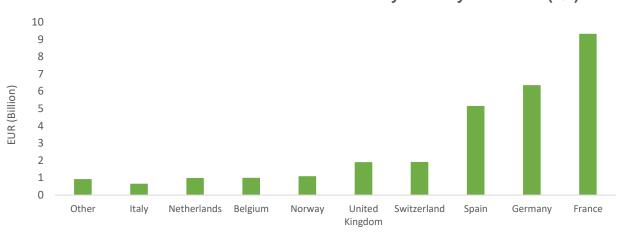


## afme/ ESG linked and Green Loan Issuance

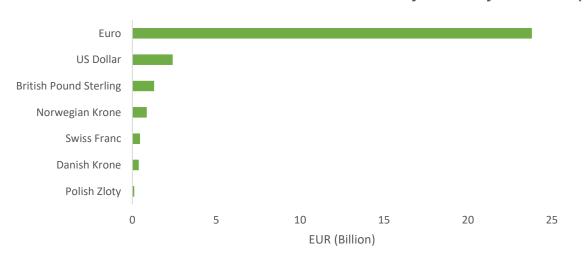
### 2.23 ESG linked and Green Loan Issuance by Deal Type: 2023 YtD (Q1)



2.24 ESG linked and Green Loan Issuance by Country: 2023 YtD (Q1)

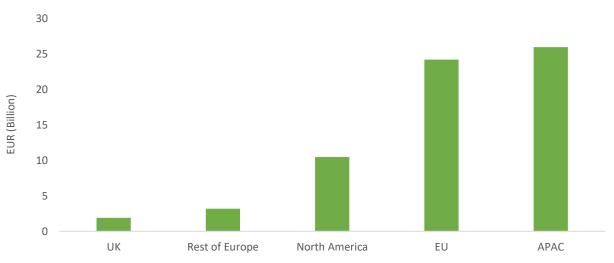


### 2.25 ESG linked and Green Loan Issuance by Currency: 2023 YtD (Q1)



Source: Dealogic

### 2.26 ESG linked and Green Loan Issuance Global Comparison 2023 YtD (Q1)

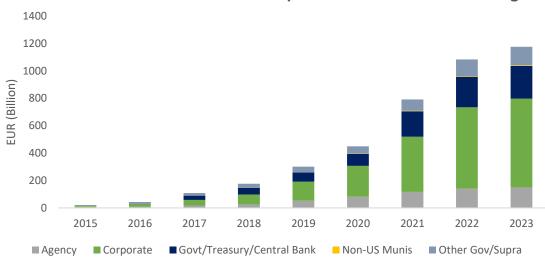




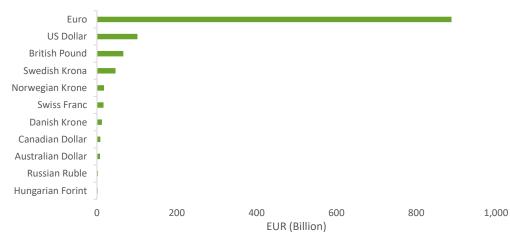
# ESG Bonds Outstanding

## afme/Green Bond Outstanding Finance for Europe

### 3.1 Evolution of European Green Bond Outstanding

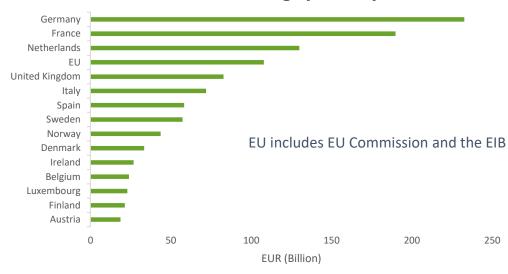


### 3.3 Outstanding Amount by Currency

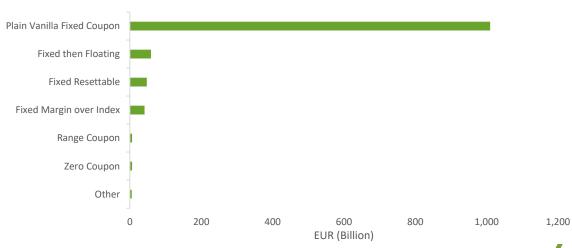


Source: Refinitiv Eikon

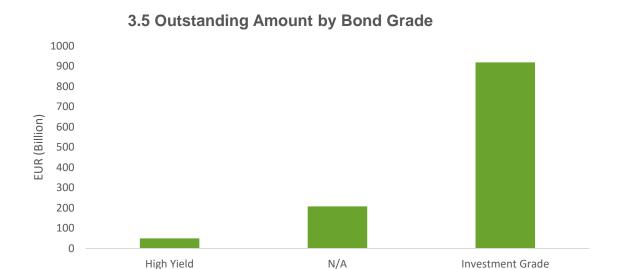
### 3.2 Green Bonds outstanding by Country



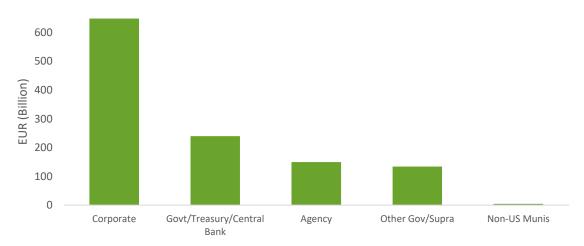
### 3.4 Outstanding Amount by Coupon Type



# **afme/** Green Bond Outstanding

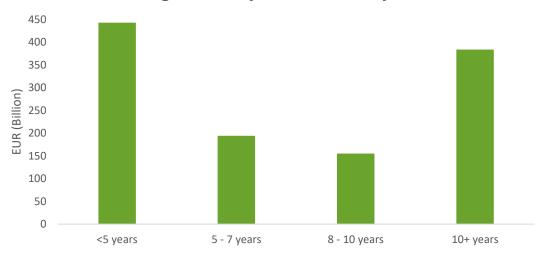


### 3.7 Outstanding Amount by Asset Class

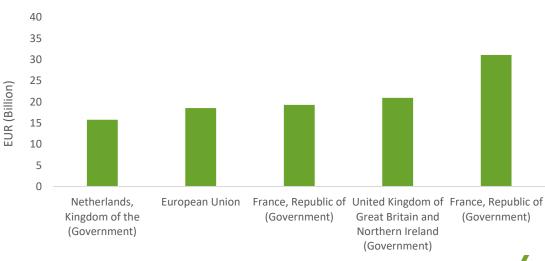


Source: Refinitiv Eikon

### 3.6 Outstanding Amount by Years to Maturity



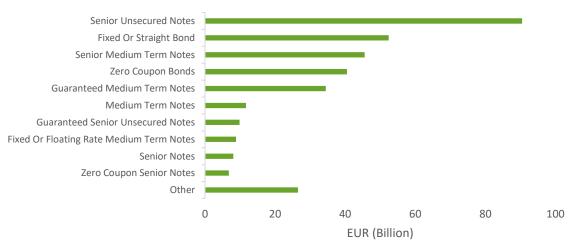
### 3.8 Outstanding by Top 5 Issuers



## afme/ Social Bond Outstanding Finance for Europe

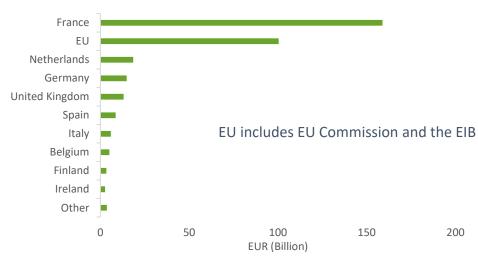


### 3.11 Outstanding Amount by Security Type

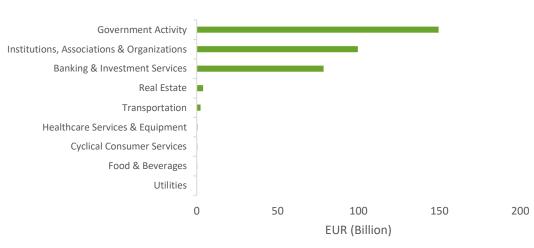


### Source: Refinitiv Eikon

### 3.10 Outstanding Amount by Country



### 3.12 Outstanding Amount Issuer Economic Sector Type

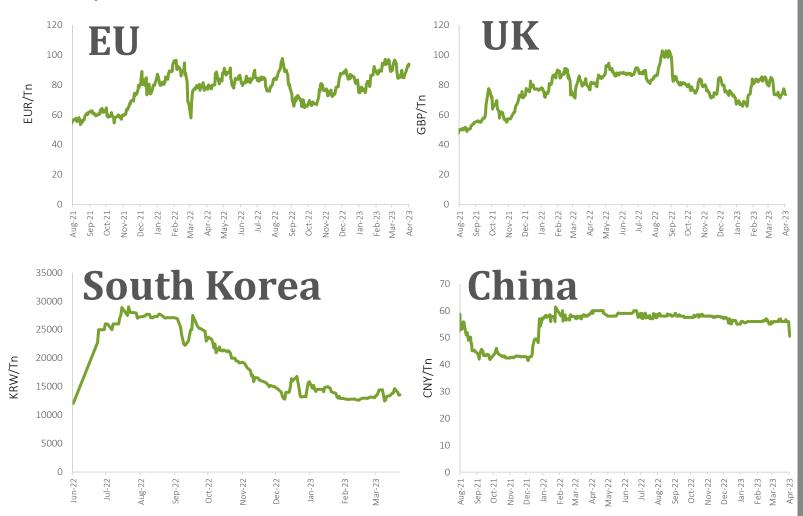




## Carbon pricing, emissions and trading

# afme/ Carbon Market Prices

### 4.1 Comparison of Global ETS Allowance Prices



Carbon prices have increased during Q1'23 in the EU and UK.

The European Union Allowance (EuA) price per metric tonne finalised Q1'23 at €89.2/Tn, from €83.3/Tn at the end of 2022.

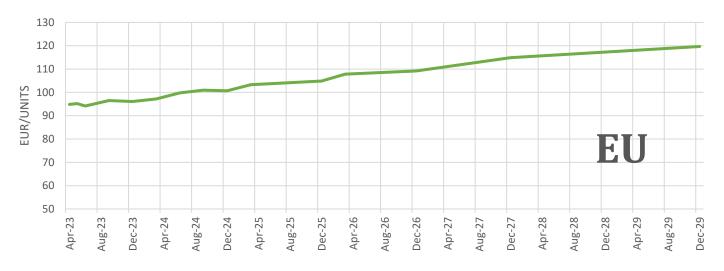
During the first weeks of Q2'23, EuA spot prices have marginally increased to €92.8/Tn.

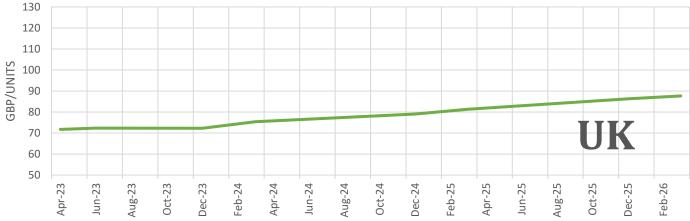
The Shanghai ETS price is the lowest among the main global ETS systems with a price per metric tonne of CNY56 as of Apr 2023 (€7.4/ Tonne) with minimal fluctuation during the year.

Prices may not be directly comparable across systems and vary greatly, given different institutional settings and differences in ETS design.

# afme/ Carbon Market Future Prices

## 4.2 Forward curve: European Union Allowance (EUA) and UK Electronic Energy Future Chain Contract





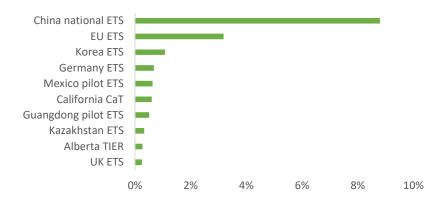
Source: Refinitiv Eikon

EU and UK forward curves anticipate higher carbon prices for the medium- and long-term future.

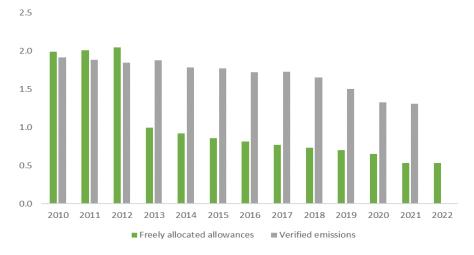


# Measurement of Carbon Emissions

### 4.3 Share of annual global GHG emissions (2022 FY)



### 4.4 EU 27 + UK Allowance Vs verified Emissions



Source: European Environment Agency, The World Bank

As of 2022, China had the largest emissions trading scheme, with a share of 8.80% of annual GHG emissions.

The European Union Emissions Trading System (EUETS) remains the second largest green house gas ETS globally, with a share of 3.20%.

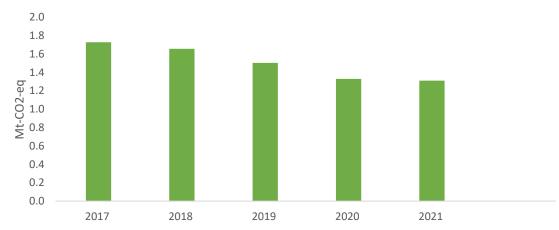
The third largest ETS globally is the Korea ETS, with a share of 1.10%.

EU+UK verified emissions have continuously decreased since 2013.

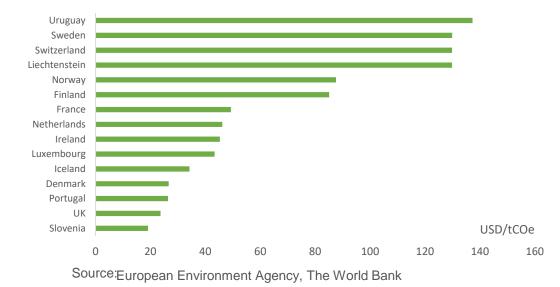


# Carbon Pricing – Allowance & Tax

### 4.5 Allowances auctioned or sold (EUAs and EUAAs)



### 4.6 Carbon Tax by Country (2022)



The EU ETS involves a cap being set on the total amount of certain greenhouse gases that can be mitted by companies covered by the system. The cap is reduced over time so that total emissions fall.

Within the cap, companies receive or buy emission allowances, which they can trade as needed. The limit on the total number of allowances available ensures that they have a value.

Every year a company must surrender enough allowances to cover all its emissions. If a company reduces its emissions, it can keep the spare allowances to cover its future needs or sell them to another company that is short of allowances.

Total allocated allowances (EUA and EUAA) continued to decreased from 1349.73 MtCO2-eq in 2020 to 1004.47 MtCO2-eq in 2021.

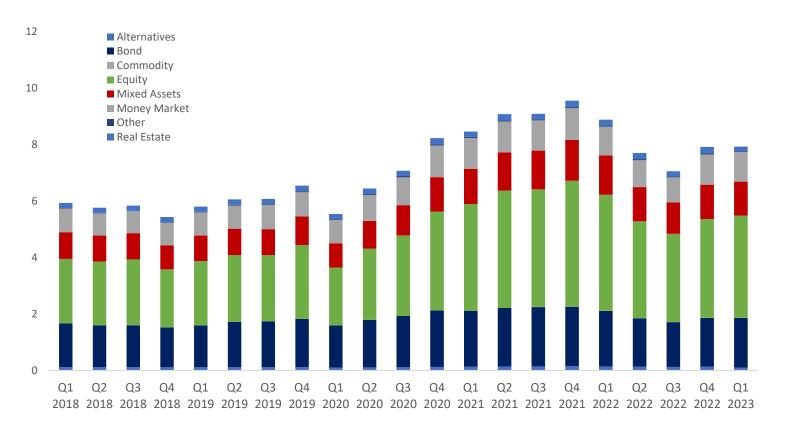
Carbon Taxes are another method of carbon pricing. Uruguay currently has the highest carbon tax globally at 137.3 USD/tCO2e. The country with second highest carbon tax is Sweden, at 129.89 USD/tCO2e.



# Fund Management

## afme/Global ESG funds

### 5.1 Global ESG Funds by Asset Class (USD tn)



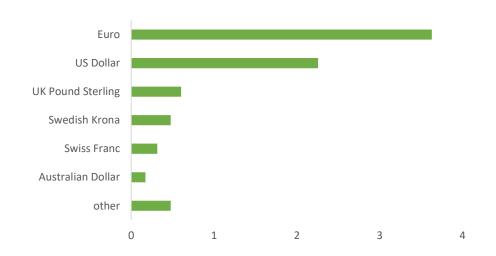
Global Funds with an ESG mandate (including Mutual Fund sand ETFs) totalled \$7.9tn as of Q1'23, a 10.7% decrease from Q1'22 but marginal increase of 0.11% from Q4'22.

Most of the asset classes did not exhibit significant changes during the quarter, with the exception of Real Estate (-34% QoQ) and Alternatives (-22.4% QoQ)

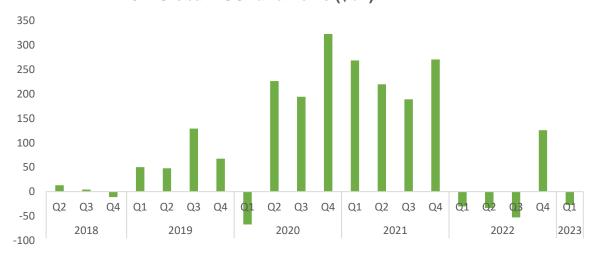
The marginal quarterly increase in Global ESG funds was driven by higher asset valuations only partially offset by net outflows. As observed in chart 5.4, net outflows from ESG funds accumulated a total of \$27.1bn during the first quarter of 2023.

## afme/ Size of Global ESG Funds

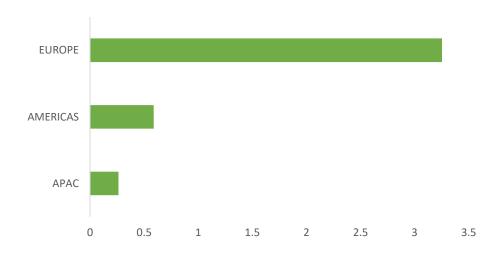
### 5.2 Global ESG Funds by currency base (USD tn)



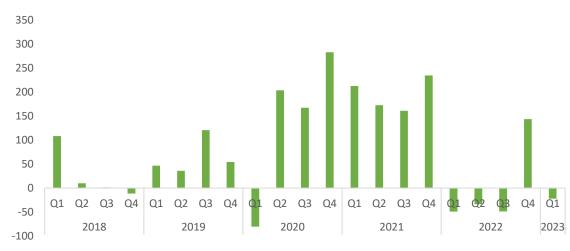
### 5.4 Global ESG fund flows (\$bn)



### 5.3 Global ESG Funds by geographical location (USD tn)



### 5.5 European ESG fund flows (\$bn)



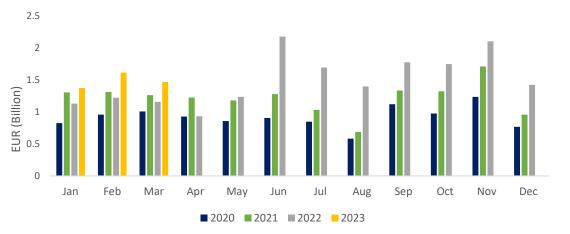


# **ESG** Bond Trading

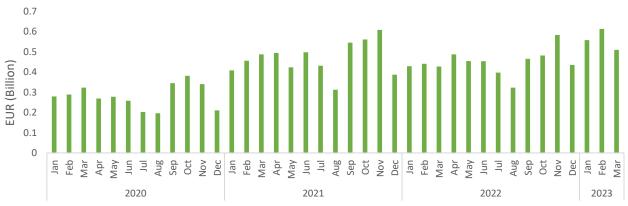
# afme/ Finance for Europe

## **ESG Bond Trading Volumes**

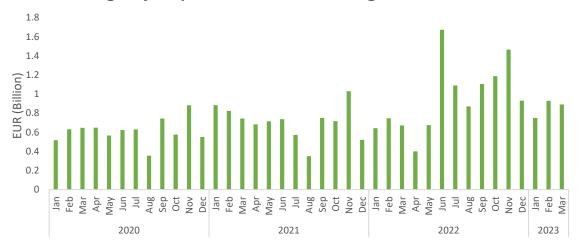
6.1 European ESG Bond Average Daily Trading Volumes (all issuers)



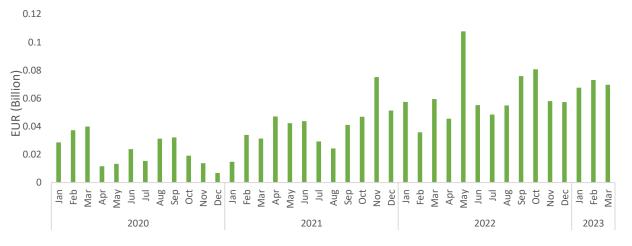
**6.2 Average Daily Trading Volumes: European ESG Corporate Bonds** 



6.3 Average Daily Trading Volumes: European ESG Government, Agency, Supranational, and Sovereign Bonds



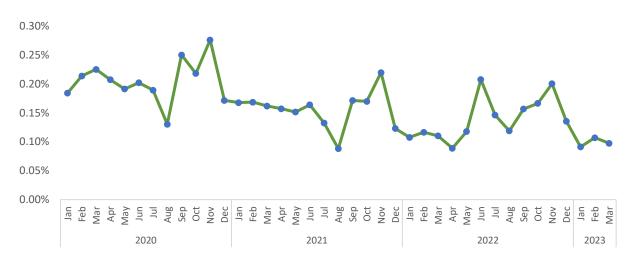
6.4 Average Daily Trading Volumes: European ESG ABS and Covered Bonds



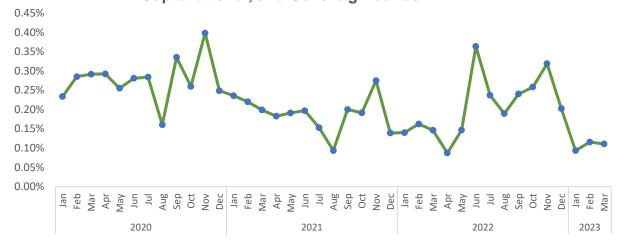
Source: Trax (a MarketAxess company)

## **ESG Bond Turnover Ratios** Finance for Europe

6.5 European ESG Bond Turnover Ratio (all issuers)

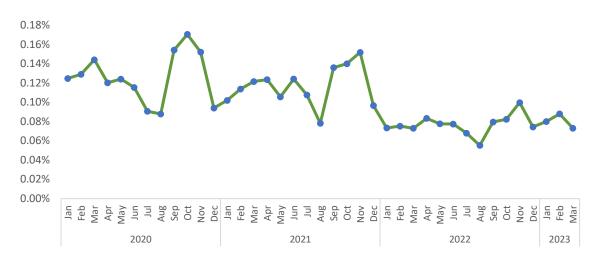


6.7 Turnover Ratio: European ESG Government, Agency, Supranational, and Sovereign bonds



### Source: AFME from Trax (a MarketAxess company) and Refinitiv Eikon

### 6.6 Turnover Ratio: European ESG Corporate Bonds



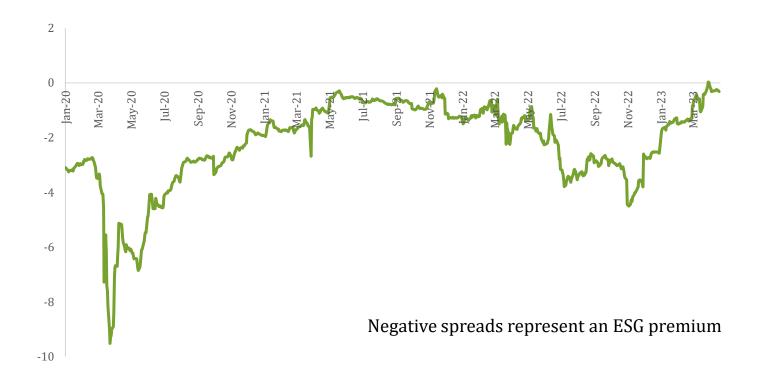
<sup>\*</sup> Turnover Ratio has been calculated by dividing the average daily trading volume by the outstanding amount



## Valuations

# afme/ ESG premia

## 7.1 Spreads (OAS) of EUR-denominated corporate ESG bonds against non-ESG corporate benchmarks (bps)

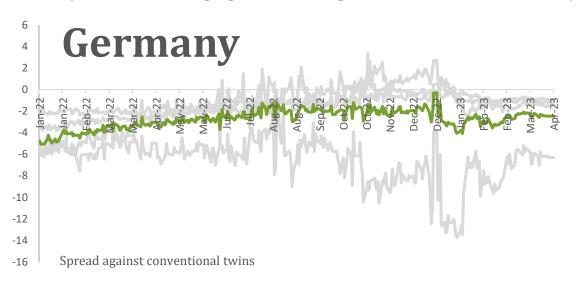


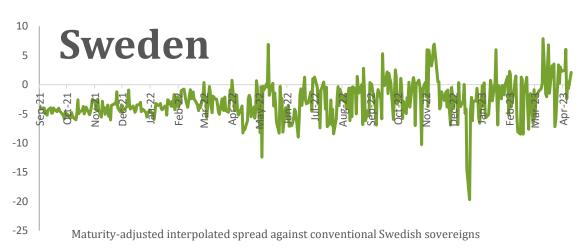
Spreads of corporate ESG bonds against non-sustainable benchmarks have tightened in the first quarter of the year from c2.5bps at the start of the year to c0bps in April 2023.

As shown on pages 36 and 37, the green premia (i.e. greenium) for sovereign bonds varies by issuer and by instrument, suggesting that in addition to the sustainability features of the sovereign benchmarks, other technical factors such as liquidity may influence yield premia against conventional bonds.

## afme/ Sovereign green premia

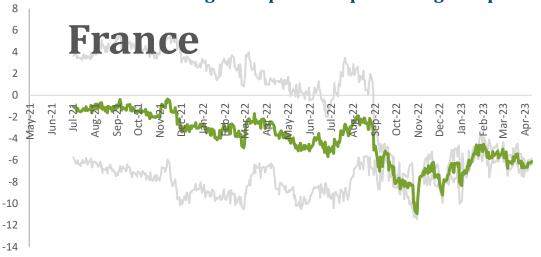
7.2 Spreads of sovereign green bonds against conventional reference (bps)





Source: Refinitiv Eikon and Datastream

### Negative spreads represent a green premium

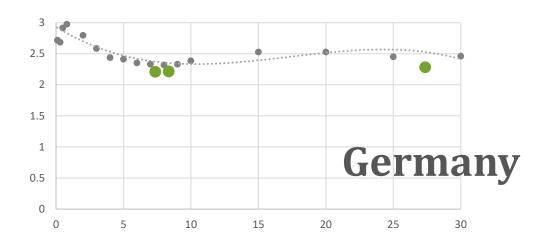


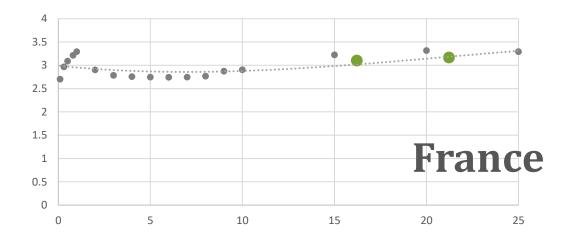
Interpolated spread maturity-adjusted against conventional OATs

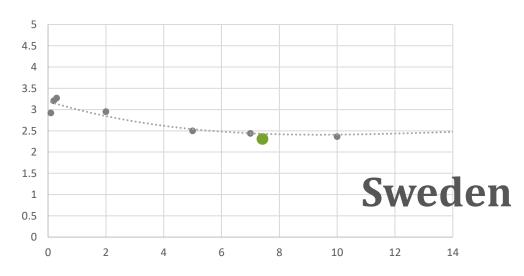


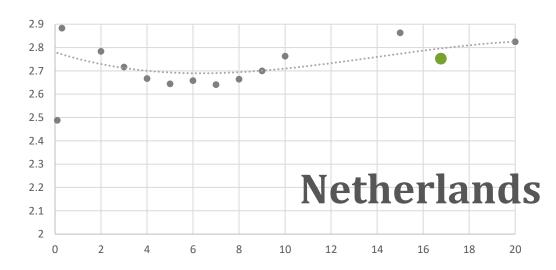


### 7.3 Sovereign yield curves and yields for selected green sovereign bonds. 13 Apr 2023



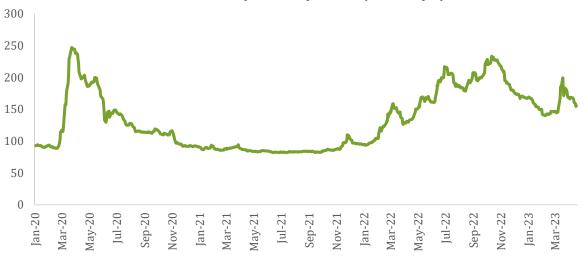






## afme/ ESG Bond Spreads

7.4 ESG EUR Corporate spreads (OAS, bps)



7.5 EUR corporate spreads by ESG rating (OAS, bps)



Source: Barclays and Bloomberg

## afme/ Green Bond Spreads

### 7.6 Green bond spreads by currency (OAS, bps)

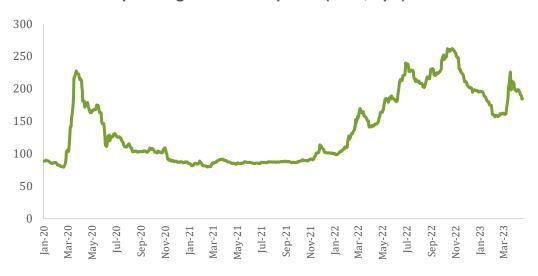


7.8 Global Green bond spreads by credit rating (bps)



### Source: Barclays and Bloomberg

### 7.7 EUR Corporate green bond spread (OAS, bps)

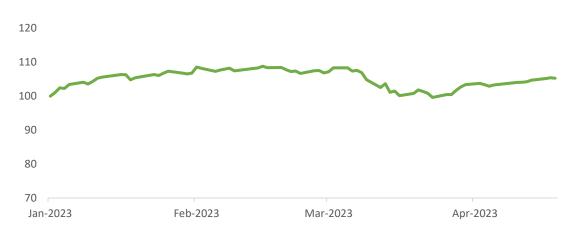


## afme/ ESG Equity Indices

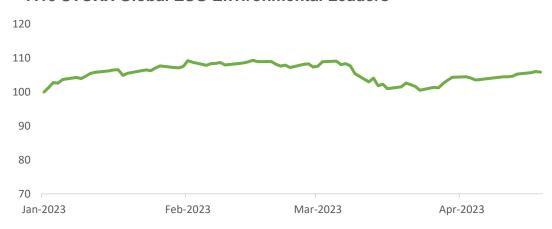
## 7.9 MSCI Europe SRI Net Index EUR and EUR STOXX 600 (1 Jan 2023=100)



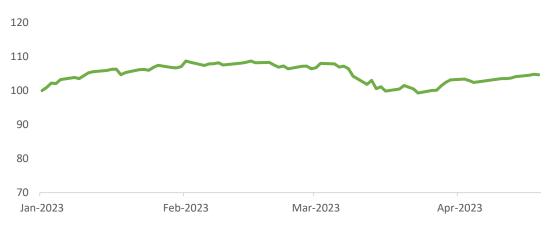
### 7.11 STOXX Global ESG Governance Leaders



### 7.10 STOXX Global ESG Environmental Leaders



### 7.12 STOXX Global ESG Social Leaders



Source: Refinitiv Eikon

## afme/ Methodology and Criteria

<u>Green Bonds:</u> Green bonds fund projects that have positive environmental and/or climate benefits. Most of the green bonds issued are green "use of proceeds" or asset-linked bonds. Proceeds from these bonds are earmarked for green projects but are backed by the issuer's entire balance sheet. There are also green "use of proceeds" revenue bonds, green project bonds and green securitized bonds. The Green Bond Principles (GBP) are voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the Green Bond market by clarifying the approach for issuance of a Green Bond.

<u>Carbon Pricing:</u> Carbon pricing is an instrument that captures the external costs of greenhouse gas (GHG) emissions—the costs of emissions that the public pays for, such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise—and ties them to their sources through a price, usually in the form of a price on the carbon dioxide (CO<sub>2</sub>) emitted. Carbon pricing can take the form of a carbon tax or fee, or a cap-and-trade system that depends on government allotments or permits.

ESG: ESG stands for Environmental Social and Governance. It refers to the three key factors when measuring the sustainability and ethical impact of an investment in a business or company.

<u>ETS:</u> Emissions trading system is a market-based approach to controlling pollution by providing economic incentives for reducing the emissions of pollutants. The EU emissions trading system (EU ETS) is a cornerstone of the European Union's policy to combat climate change and its key tool for reducing industrial greenhouse gas emissions cost-effectively

<u>EUA</u>: A European Union allowance (EUA) is the official name for Europe's emission allowances, which in 2008 was defined as the official Kyoto allowance for countries in the EU. One EUA entitles the holder to emit one ton of carbon dioxide or carbon-equivalent greenhouse gas.

<u>Europe:</u> Countries included: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, German Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Switzerland, United Kingdom.

**Social Bonds**: Social Bonds are bonds' whose proceeds are used to raise funds for new and existing projects that tackle a specific social issue and/or seek to achieve positive social outcomes. The reference framework for issuance of Social Bonds is the Social Bond Principles (SBP). The SBP promote integrity in the Social Bond market through guidelines that recommend transparency, disclosure and reporting Social objectives may include, but are not limited to affordable housing, affordable basic infrastructure, employment generation and sustainable food systems.

**SRI**: Socially responsible investing or SRI, is a strategy that emphasizes not only the financial gains from an investment but also ethical or social change.

Sustainable Bonds: Proceeds of Sustainable Bonds are split between green projects and social projects.

### Contacts

### Research

### Julio Suarez

Director, Research Julio.Suarez@afme.eu +32 2 883 55 50

### **Kevin Mushi**

Graduate, Research Kevin.Mushi@afme.eu +32 2 883 55 41

### Sustainable Finance

### Oliver Moullin

Managing Director, Sustainable Finance Oliver.Moullin@afme.eu +44 (0)20 3828 2717

### Giorgio Botta

Manager, Sustainable Finance Giorgio.Botta@afme.eu +44 (0)20 3828 2736

### **Pablo Portugal**

Managing Director, Advocacy Pablo.Portugal@afme.eu +32 (0) 479 027 993

### Carlo De Giacomo

Manager, Commodities Carlo.Degiacomo@afme.eu +44 (0)20 3828 2709

### **London Office**

39th Floor 25 Canada Square London E14 5LQ United Kingdom +44 (0)20 3828 2700

### **Brussels Office**

Rue de la Loi, 82 1040 Brussels Belgium +32 (0)2 788 3971

### Frankfurt Office

Neue Mainzer Straße 75, 60311 Frankfurt am Main, Germany +49 69 153 258 963

### Disclaimer and Methodology

Your receipt of this document is subject to paragraphs 3, 4, 5, 9, 10, 11 and 13 of the Terms of Use which are applicable to AFME's website (available at <a href="https://www.afme.eu/About-Us/Terms-of-use">https://www.afme.eu/About-Us/Terms-of-use</a>) and, for the purposes of such Terms of Use, this document shall be considered a "Material" (regardless of whether you have received or accessed it via AFME's website or otherwise).

AFME is registered on the EU Transparency Register, registration number 65110063986-76





