SustainaWeekly

German green bond supply to ramp up

- **Strategist: We expect green expenditures to speed up in the coming years and with it additional financial resources via higher green bond issuance. Based on expectations for green investment, we estimate the German green bond annual supply to be at around EUR 25bn in 2025 which reflects around 15% annual growth.**

- **Economist: Renewables have as their main problem intermittency meaning that there is substantial need for storage. In EVs there is lots of unused storage and the technology bi-directional charging could unlock this. Despite the major advantages there are also significant challenges currently for this technology to be widely adopted.**

- **Policy & Regulation: The ECB released its third review on banks' climate-related and environmental risk disclosures practices and trends. Supervisors recognise developments and improvements, but confirm that financial institutions are still lagging behind their expectations. In particular, banks need to further substantiate their disclosures.**

- **ESG in figures: In a regular section of our weekly, we present a chart book on some of the key indicators for ESG financing and the energy transition.**

In this edition of the SustainaWeekly, we first take a closer look at the outlook for the German government's climate investment plans, the implications for green bond supply and the greenium. We then go on to assess the potential for bi-directional charging using EVs as a solution for the intermittency challenges of renewables. Finally, we set out the main conclusions from the ECB's third review on banks' climate-related and environmental risk disclosures practices and trends.

Enjoy the read and, as always, let us know if you have any feedback!

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Germany to speed up Green expenditures and with it its Green bond supply

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- **The Federal government recently published its Green bond allocation report (2022) as well as its Green bond investor presentation to outline its former and future environmental plans**
- **The German government continues its progress in trying to meet its climate targets**
- **However, despite the recent ramp-up in green investment, more will be needed to meet those targets**
- **As such, we expect green expenditures to speed up in the coming years…**
- **… and with it additional financial resources via higher green bond issuance**
- **Furthermore, the German greenium started to recover from its historical low in late 2022**
- **We found that the greenium is partly driven by a liquidity premium…**
- **… the poorer the liquidity conditions of Green bonds, the lower the greenium**
- **However, the rise in green bond supply will affect the scarcity premium which may affect the greenium to the downside**

On Tuesday 18th of April, the Federal Republic of Germany presented its Green bond plan (see here) for the year as well as its Green bond allocation report late March from last year (see here) and provide more details on the allocation of its green eligible expenditures. Germany has committed itself to various climate targets including the most well-known Paris agreement as well as the Net zero target (to reach climate neutrality by 2050). As such, the government continues to dedicate important budgetary resources but a lot more is still needed to meet those targets. To this end, the German cabinet established last year a ''Climate and Transformation fund'' to fund the energy transformation and climate protection of the country. Around 177.5 billion euros have been allocated to this fund between 2023 and 2026. In addition, after its first green bond issuance in 2020, Germany is set to become a well-established permanent issuer of green bonds, and is now one of the most active eurozone countries in the sovereign green bond market space with an amount outstanding of EUR 48bn. As such, Germany's plan to establish a green bund yield curve for the euro area continues to advance, particularly as green expenditures are set to rise every year going forward. Although, this increase in green bond supply might not have a positive effect on the German ''Greenium'' in the future.

Higher green expenditures entail higher Green bond supply in the future

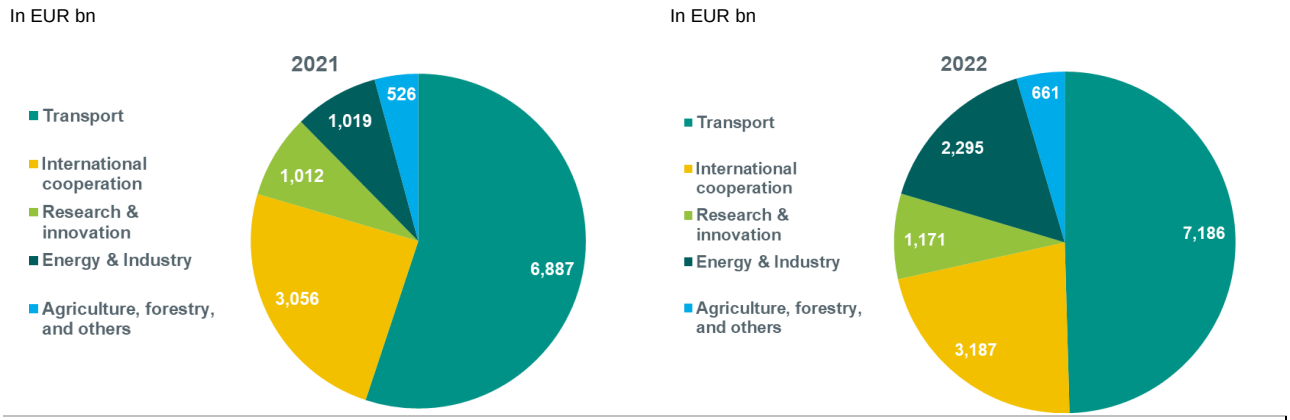
On March 2023, the Federal government published its Green Bond allocation report from 2022. Overall, the Federal government spent EUR 16.8bn on climate protection and environmental programs in 2021 from which, EUR 14.5bn was financed via Green bond issuance in 2022 (as shown in the graph below). In this report, we can find how and where the green-eligible expenditures have been allocated to. Green-eligible expenditures are expenditures from all areas of the federal budget that support the overall climate and sustainability targets set out in the Green Bond Framework (see here). The selection of eligible expenditures is made in accordance with the key objectives of Germany's climate action policies and can be classified into five areas: 1) transport; 2) International cooperation; 3) Research and innovation; 4) Energy and Industry; 5) Agriculture, forestry, natural landscapes, and biodiversity. Like in previous years, the biggest green expenditures were allocated to the transport sector followed by international cooperation (to assist emerging and developing countries in their climate transitions) as shown in the pie charts below.

Although, we judge that the energy sector, which represented the third biggest expenditure in 2022, should take a bigger share in this green bond allocation strategy. Indeed, Germany is currently restructuring its energy system by moving definitely away from nuclear and fossil fuels to renewable energies. In the end, the energy sector is responsible for the largest share of emissions in Germany (roughly 30%). The Federal Government already shared its difficulty in meeting its climate targets notably the 2030 targets[1] (see here) particularly due to its energy mix. Indeed, Germany's electricity mix is still heavily dependent on fossil fuels. In 2021 half of the electricity was generated by fossil sources. Coal generation had halved since 2015 but its share in total electricity generation rose again to 29% in 2021 (23% in 2020), while natural gas

[1] Germany has made both national and international commitments to cut its greenhouse gas emissions by more than half by 2030, compared with 1990 levels. To do so, the government launched the Climate Action Programme 2030.

currently makes up 16% of Germany's electricity mix (Climate Action Tracker). Germany is already facing a shortfall of about EUR 12bn in its special climate-protection fund which also demonstrates the additional unexpected cost of greening the economy.

Green Federal securities: Use of proceeds (2021 & 2022)

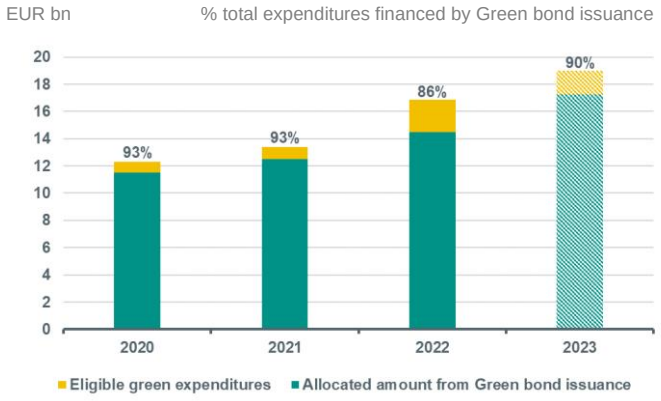


Source: ABN AMRO Group Economics, Green bond allocation report 2022 (https://www.deutsche-finanzagentur.de/fileadmin/user_upload/Institutionelle-investoren/green/reports/GreenBondAllocationReport_2022_en.pdf)

Therefore, to meet the goals set out in the Climate change act, Germany will need to ramp up its investment in the energy and climate transition. The government already increased its Climate and Transformation fund's allocation to EUR 200bn to fund its industrial transformation between now and 2026 (incl. climate protection, hydrogen technology, and expansion of electric vehicles). One way for the Federal government to collect those financial resources is via Green bond issuance.

In the Green bond presentation, the Federal government indeed reaffirmed its will to build-on its green bond yield curve. The Federal government recently issued a new Green DBR Benchmark (DBR 15 Feb 2033) for EUR 5.25bn. Another longer maturity is also to be issued this year. As such, green bond issuance is set to rise again this year as shown in the graph below. An amount of EUR 8.25bn has already been issued since the start of the year via the DBR 0% 2025 reopening and the new 10y syndication.

Green bond issuance finances 90% of green expenditures



Source: Deutsch Finanzagentur, ABN AMRO Group Economics

Germany's Green bond issuance continues to rise

Source: Bloomberg, ABN AMRO Group Economics

As discussed previously, we expect the Green bond issuance volume to continue rising in the coming years. If we look at the green bond supply growth over the past years and assume a similar trend going forward, we could expect around 15% growth every year as additional issuance. Based on expectations for green investment, we estimate the German green bond annual supply to be at around EUR 25bn in 2025 which reflects around 15% annual growth. Aside from the extra push it will give Germany to finance its energy transition, the rise in green bond supply might also have a significant impact on the so-called greenium (the yield spread of a green bond against the non-green bond) as discussed in the next section.

Bund Greenium is slowly recovering from its 2022 historical lows

After falling to its lowest level, the German greenium[2] is slightly recovering from a turbulent 2022 as shown in the graph below. On average the Greenium is currently trading between 2 and 3bp for long-term bonds and even larger for the 3y green bond now at around 6bp. As such, green bonds recovered partly from their historic low with the greenium reaching as low as 0bp in late 2022.

In a previous piece (see **here**), we noted that there was a clear correlation between the bonds' liquidity (measured by bid-ask spread) and the greenium. We performed a correlation analysis between the bid-ask spread and the greenium. On average, for the long-maturity German green bonds, we find a (negative) correlation of 66% which signifies a relatively strong dependency between those two measures. When conducting a regression analysis for each German green bond, with the liquidity variable (x-variable) and the greenium variable (y-variable) we also obtain a negative coefficient and get statistically significant results for each regression. Those results can be interpreted as when the bid-ask spread increases (so a case where investors could request a liquidity premium) the greenium shrinks. Indeed, the greenium decreases as the Green bond yield rises in order to compensate investors of the Green bond poorer liquidity (so-called liquidity premium). Thus, this proves that the liquidity premium plays a key role in the greenium development, as also shown in the graph below.

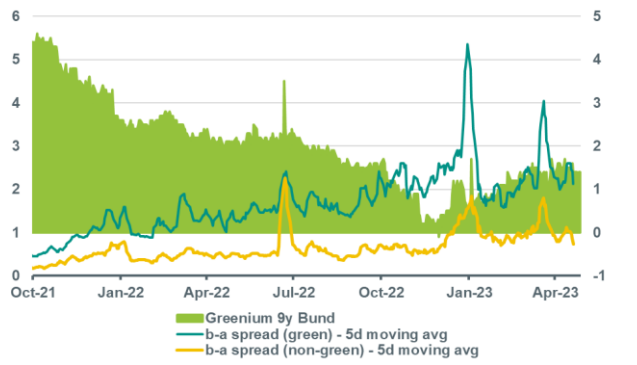
German greenium is recovering from 2022 turbulence

Greenium (in bp)

Source: Bloomberg, ABN AMRO Group Economics

German greenium is composed of a liquidity premium

In bp



Source: Bloomberg, ABN AMRO Group Economics

Moreover, the supply effect is an important underlying factor in explaining the German greenium. The supply is clearly not matching the demand at the moment. As stated by the German government itself, the issuance volume of the green bond is different and much lower than the conventional twin. Looking at the first years of the green bond issuance, the greenium was indeed higher and traded around 6bp compared to 2bp today. This was the period where the supply was at its lowest which then raise the question about the scarcity premium and its effect on driving the greenium. The rarity of the bond in the market leads it to trade at a higher cash price.

Indeed, we judge that the scarcity effect also plays a key part in the greenium development (which also correlates with the liquidity issue discussed above). In general, a lack of supply tends to drive the bond cash price up. Thus, a shortage of supply and excess demand in the green bond market might cause the existence of a scarcity as well as a liquidity premium. But those two have and will have different effects on whether the greenium will remain/increase or disappear if the green bond supply is indeed set to continue rising in the following years. On the one hand, a rise in issued green bonds will automatically lead to the scarcity effect fading as supply approaches investors' demand. And on the other hand, this will lead the German green bonds to trade more frequently in the market and thus reduce the liquidity premium. The former would tend to reduce the greenium as the scarcity premium shrinks, decreasing the bond cash price. While the latter would mean that investors will stop demanding a liquidity premium which will then be beneficial for the greenium as the Green bond yield will fall.

[2] The greenium is calculated as the difference between the non-conventional bond yield and the green bond yield

Those two factors are difficult to isolate and thus determining each one's effect on the green bond premium remains challenging. Therefore, as the growth of the green bond market continues, this will provide further answers to the greenium question and help to unveil which factor has the strongest effect on the greenium.

Bi-directional charging to unlock unused storage in EV?

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- **Renewables have as their main problem intermittency**
- **Therefore there is substantial need for storage**
- **But storage is expensive, not common and consumers have other priorities in reducing emissions**
- **In EVs there is lots of unused storage and the technology bi-directional charging could unlock this**
- **Despite the major advantages there are also challenges such as the lack of charging standards, few vehicles support this technology, costs, regulatory issues and most importantly the battery chemistry**

To reach to reach net-zero by 2050 renewables play a crucial role. The main problem with renewables is intermittency so it comes and goes and is random. Therefore we need a way to store this energy. However, storage, via for example a home battery, is expensive and not common yet. Consumers and businesses have other priorities in terms of reducing greenhouse gas emissions such as for example buying battery electric vehicles. The average battery capacity of an electric car is substantially higher than that of a home battery. Depending on the use of the electric vehicle there could be substantial unused storage capacity. The IEA conservatively estimates that there will be 130 million electric vehicles on the road globally by 2030. In addition to increasing electricity demand, these electric vehicles will contain 10 times the amount of energy storage needed by the grid. The IEA's most aggressive estimate, 250 million EVs, would mean 6% of the batteries in the automotive fleet could potentially meet all of the grid's energy story needs. Will the technology vehicle-to-everything and more specifically bi-directional charging be the solution to unlock unused storage in electric vehicles? In this note we focus mainly on answering this question.

What is vehicle-to-everything?

V2X means vehicle-to-everything. It is a collective term for communication technologies between a vehicle and everything (vehicles, road infrastructure, grid, house, business etc). There are different types of potential V2X wireless technologies but there are two main categories: vehicle wireless communication technologies and bi-directional charging technologies. Vehicle wireless communication technologies are vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), vehicle-to-network (V2N) and vehicle-to-pedestrian (V2P). Bi-directional charging technologies are vehicle-to-grid (V2G), vehicle-to-home (V2H), vehicle-to-business (V2B) and vehicle-to-load or (V2L). Below we start with a short explanation of vehicle wireless communication technologies before we focus the rest of this note on the bi-directional charging technology.

Vehicle wireless communication technologies

Vehicle-to-vehicle would be able to identify speed, location and direction of other vehicles within a proximity of 300 kilometres. Vehicle-to-infrastructure connects the vehicles to everything from traffic signals to railroad crossings. Vehicle-to-network connects vehicles to cloud-based networks for real time weather etc. Vehicles-to-pedestrian enables direct communication between a vehicle and a pedestrian within a close proximity. These technologies are already widely used in relatively new cars. Readers might be familiar with this technology already. For example, the steering wheel corrects when the driver tries to switch lanes very soon after activating the indicator. So you need to activate the indicator well before switching lanes. This is an example lane keeping which a vehicle-to-infrastructure (V2I) technology. Collision avoidance is an example of a vehicle-to-vehicle (V2V) technology.

Bi-directional charging technologies

Above we shortly discussed the vehicle wireless V2X technologies. Now we focus on bi-directional charging V2X technologies. Vehicle-to-grid (V2G) technology enables the electric vehicle to both charge and discharge electricity back to the grid. This is done by using a special type of charge point capable of AC / DC power conversion and the discharge functionality of the car. With vehicle-to-home or business (V2H/V2B) technology, a stationary vehicle can be used in a similar way to a home battery system. Vehicle-to-load (V2L) provides power at the camping/construction sites and other mobile energy source needs. Vehicles with V2L have a built-in bidirectional charger and standard AC power outlets, which can be used to plug in any regular household AC appliances.

Pros

If these technologies become fully operational, they have major advantages. These advantages can both apply to homes (V2H) and to businesses (V2B). First, solar energy generated during the day can be stored in the electric vehicle and used to power home appliances when the sun has set. Then there is no longer a need for a separate battery. So the battery in the electric vehicle becomes the storage devise a for home or business to manage peaks in electricity demand and to be a back-up in case of a power outage. Therefore the energy generated by solar panels will not be uploaded to the grid as long as the battery of the electric is not fully charged yet. The system gives priority to charging the battery of the electric vehicle before the energy is uploaded to the grid. As a result there will be less grid congestion. Second, it provides an emergency power source to the owner of the home or building where it is implemented. To isolate the house from the grid during outage is known as islanding. So the electric vehicle becomes the power backup. Third, the electric vehicle can be charged when electricity prices are low and discharged to the grid when electricity prices are high. This way the user has become a kind of an electricity trader as it is not for own use but to maximize profits. Fourth, this technology will support grid resilience and improve the cost competitiveness of electric vehicles and distributed renewable energy generation projects according to the IEA.

What is needed

For V2G, V2H or V2B to operate, it requires a compatible bi-directional charger, an electric vehicle that has the technology and additional equipment, including an energy meter (current transformer meter) which must be installed at the main grid connection point. Two other critical requirements for bi-directional chargers are that they must be galvanically isolated from the AC mains, and they must immediately cease operating as an inverter upon loss of power (in other words, they can't be used as a standby generator).This is the anti-islanding provision. This is to protect the utility workers (source: **chargedevs.com**).

Challenges

The advantages are very obvious but there are also numerous challenges to the bi-directional charging preventing a take-off of this technology. First the lack of standard bi-directional charging. Different countries have different charging standards. For Europe this is CCS charging via AC. Fast charging is via DC CCS connector or CHAdeMo (Charge and Move) connector. CHAdeMO is both the name of the DC charging technology designed for electric vehicles and that of the organisation to develop the technology. CHAdeMo connector has already the possibility of bi-directional charging. The roadmap for CCS to reach full V2G capability is expected to be completed by around 2025.

Second, apart from the models from Nissan, Honda, and Mitsubishi, there are currently relatively few vehicles that support bi-directional charging. Bi-directional chargers can only work with vehicles that are compatible with two-way DC charging**.** Volkswagen said that bi-directional charging would come to all 2023 ID.4 vehicles built with the 77 kWh battery and it would update earlier models.

Third, bi-directional chargers are more sophisticated and are therefore more expensive.

Fourth, there are also regulatory challenges to roll out V2G technology. Bi-directional chargers, like solar inverters, are considered another form of power generation and must meet all regulatory safety and shutdown standards in the event of a grid failure. Vehicle-to-grid (V2G) standards are difficult and complex as they involve regulating the power, safety and electrical requirements when discharging energy into the grid.

Last but not least bi-directional charging could cause a faster degradation of the battery. To understand this we need to explain some of the battery chemistry. Most electric vehicles have NCM batteries that contain Nickel Cobalt and Manganese. These batteries have high storage density and low-temperature resistance. The expected cycles in lifetime (to 80% capacity) are between 500-1500 charge and discharge cycles (in short cycle). The use of an electric vehicle in bi-directional charging will result in a substantial increase of the use of charge and discharge cycles which would normally only be used for driving. Batteries for homes often charge and discharge on a daily basis (depending on the capacity) while an electric vehicle is often not charged and discharged on a daily basis. It is likely that this will result in a faster degradation of the battery. But there are more factors at play and depth of discharge is an important factor. Depth of discharge refers to how much battery

you use in between charges. A higher depth of discharge could result is considerably lower cycles. For example the expected cycles in lifetime for a depth of discharge of 80% (from 100 to 20%) is 300 while with a depth of discharge of 50% this is 1300 (source: **recurrentauto**). If the user lowers its depth of discharge when starting to use the electric vehicle in bi-directional charging, this could dampen the effect of higher use of the battery. Currently there is a tendency to use Lithium Iron Phosphate batteries (LFP) in storage at home. These batteries are safer, cheaper and have substantially higher expected cycles which is suitable for daily charge and discharge in homes and/or business. Even though these battery and components are cheaper the end production is still expensive because less production and demand. The battery is charged during the day with solar panels and discharged when the sun sets. The number of cars with LFP batteries is increasing because these batteries are cheaper, don't contain nickel, cobalt and manganese and have longer life cycles. That said though cars with LFP batteries may be better suited to be used as storage as well.

Conclusion

The drive to net-zero has resulted in high demand for renewables and for electric vehicles. But both have resulted in major challenges for the grid. Renewables have as their main problem intermittency. It can't be stored so it will feed to the grid when it is generated, resulting in a possible overcapacity of electricity. Electric vehicles on the other hand draw lots of electricity from the grid while charging. This will also strain the grid. But there is also lots of unused storage in electric vehicles. If we were to combine renewables with electric vehicles this would solve major challenges for the grid. The technology is called vehicle-to-everything and more specifically bi-directional charging, which is still at an early stage. Despite all the advantages of this technology there are also major challenges such as a lack of charging standards, few vehicles support this technology, costs, regulatory and most importantly battery chemistry. We think bi-directional charging could be a game-charger in the energy transition if these challenges are tackled.

Time is running out for bank climate-related risks disclosures

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- **The ECB has released its third review on banks' climate-related and environmental (C&E) risk disclosures practices and trends**
- **Supervisors recognise developments and improvements, but confirm that financial institutions are still lagging behind their expectations**
- **The report also revealed that most banks are not yet prepared to comply with EBA ITS Pillar 3 reporting guidelines**
- **Banks need to further substantiate their disclosures and reports and start providing less generic information**

The ECB has recently published its review on banks' climate-related and environmental risks (C&E) disclosures practices and trends (see **here**). The central bank recognized that banks have improved their disclosures, but still identified severe weaknesses concerning the level of details of the disclosures. Since publishing its **Guide on climate-related and environmental risks** (the Guide) in 2020, the ECB already conducted three reviews of financial institutions C&E risk disclosures. Each review aims to assess both the existence and the substantiation of banks' climate-related disclosures, and provide feedback to each bank, as well as give examples of good practices.

Furthermore, in January 2022, the European Banking Authority (EBA) published the **Implementing Technical Standards (ITS) on Pillar 3 disclosures** on ESG risks, promoting standardized and transparent disclosures for all large financial institutions[3]. This year is the first in which the institutions under the scope of EBA ITS will have to publish their Pillar 3 Reports with the reference date of 31 December 2022. The ECB has therefore also included in its third review an assessment of how advanced and developed Pillar 3 disclosures are so far.

The review included 103 significant institutions (SIs) and 28 less significant institutions (LSIs). Furthermore, 12 non-EU Global Systemically Important Banks (G-SIBs) were assessed for a benchmarking exercise. The report was based on disclosures with the end of 2021 as a reference date, or later where available. The supervisor focussed on disclosures across some key areas, such as materiality, business model and strategy, governance, risk management, and metrics and targets (which it described in its 2020 Guide).

Key results

Overall, **C&E disclosures have improved** since the last review. For instance, in 2021, only 36% of the banks considered C&E risks to be material, while in 2022 this number has increased to 86%. However, the acknowledgement of material risks is not sufficient in itself, as it often only refers to basic information, lacking substantiation. Indeed, from the banks that did consider the risks to be material, only 24% of disclosures were considered as adequate[4] or broadly adequate[5]. Also, among the 14% of banks that do not consider the risk to be material, no solid justification was given, or no assessment was conducted. As such, it seems that still a significant number of banks only assesses the impact of C&E risk in a very generic way.

[3] With instruments traded in a regulated market in a Member State
[4] Adequate: the bank discloses relevant C&E risk information and somewhat substantiates that information in line with the Guide
[5] Broadly adequate: the bank discloses some C&E risk information, but it is either not comprehensive or not sufficiently substantiated

Institutions disclosing C&E risk information in 2022

Expectation	Disclosure practices	2021	2022	
		Existence of disclosures	Existence of disclosures	Adequate and broadly adequate disclosures
13	Does the institution disclose that its exposure to climate-related and environmental risks is material?	36%	86%	24%
13.4	Does the institution describe the potential strategic impact of transition risks in the short or long term?	41%	60%	37%
	Does the institution describe the board's oversight of climate-related and environmental risks?	71%	97%	50%
	Does the institution describe the organisation's processes for identifying, assessing and managing climate-related environmental risks?	71%	92%	41%
	Percentage of institutions that disclose all of the information set out in Expectation 13.4	39%	58%	21%
13.5	Does the institution disclose its Scope 3 financed emissions?	15%	50%	16%
13.6	Does the institution disclose its key performance indicators or key risk indicators associated with its strategy-setting?	49%	75%	46%
Percentage of institutions that disclose all of the information set out in Expectations 13.4 to 13.6		6%	34%	6%
13.7	Does the institution disclose key information on enviromental risks other than climate-related risks?	25%	35%	17%

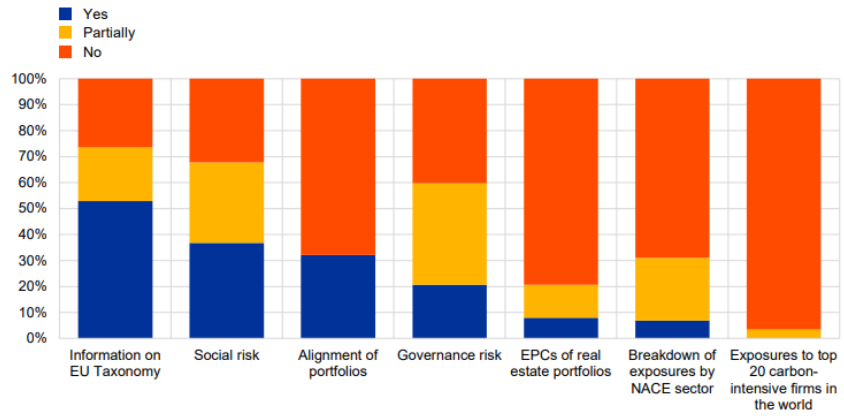
Source: ECB

The table above shows that only a third of the institutions have disclosed all of the information set out in Expectations 13.4 and 13.6, and from those, only 6% of banks provide information that is adequate or broadly adequate. Surprisingly, six banks were identified as still having insufficient disclosures for all five categories, whereas seven banks do provide detailed and transparent information. The table also reveals that half of the banks disclose adequate information about how the board oversees C&E risks, with 97% of banks disclosing information on this area. But all in all, financial institutions still have a way to go, and more efforts must be made in order to present **more substantial and less generic information**.

The report also notes that banks seem ill-prepared to provide information as defined in the EBA ITS on Pillar 3 disclosures, which in some cases is already as of this year (e.g. disclosures on EPC labels on residential and commercial real estate). Furthermore, the graph below also shows that half of the banks report on exposures that are aligned with the EU Taxonomy, although the information provided is still very generic and not meeting expectations. As such, banks need to make '*substantial efforts*' to be able to comply with the EBA ITS.

Existence of information in the disclosures for selected categories

Percentages of institutions



Source: ECB

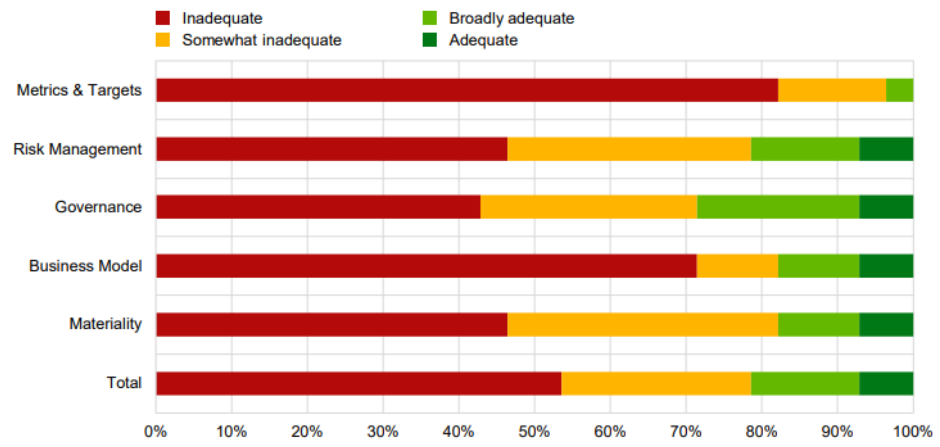
The chart on the previous page also clearly highlights discrepancies and inconsistencies in the current level of information being provided by banks. For example, while half of the banks report on exposures that are aligned with the EU Taxonomy (although very generic as we previously noted), only a small minority (around 8%) of the institutions disclose information on EPC labels of their real estate portfolio. This is a clear contrast as in particular banks with a wide mortgage portfolio require information on EPC labels to assess EU Taxonomy alignment, which brings into question whether the information on e.g. EPC labels is not available or just not being transparently reported.

Most LSI not aligned with supervisory expectations

The report included for the first time an overview on C&E disclosures of less significant institutions (LSI). Although most LSIs currently do not fall under the regulatory scope of C&E disclosures, this might change in the future with a reform of the Capital Requirements Regulation (CRR) likely demanding all credit institutions to report the EBA ITS. Nevertheless, National Competent Authorities (NCAs) are entitled to apply the expectations set out in the Guide, proportionate to an institutions' nature, scale and complexity. The key finding is that there is still a long way to go for these smaller institutions, as results were disappointing (see graph below). For instance, C&E disclosures of around 80% of LSI were assessed as inadequate or somewhat inadequate, with most room for improvement in the area of business model and strategy. The key reason for this poor performance might be related to the scarcer resources that these banks have when compared to larger, and more established institutions. However, the ECB noted that it already observed an improvement among LSIs immediately after the assessment, something it expects to continue as well.

Results of C&E risk disclosure assessments for LSIs

Percentages of institutions



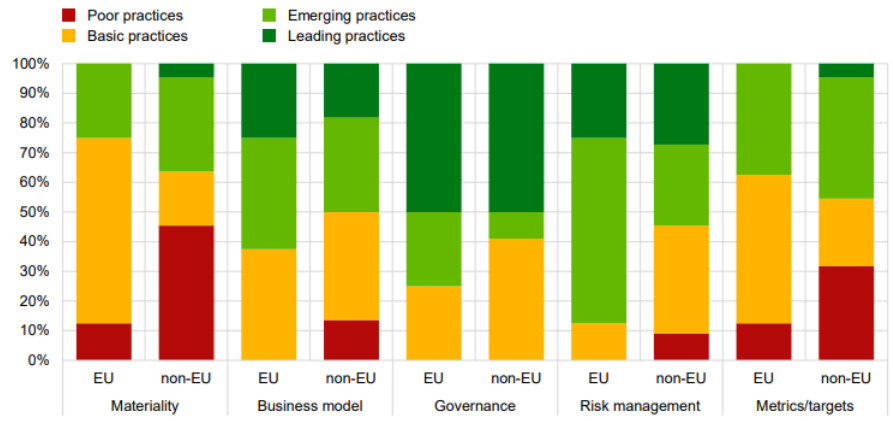
Source: ECB

Benchmark exercise between non-EU G-SIBs and EU G-SIBs

In the benchmarking exercise between the EU G-SIBs and non-EU G-SIBs, EU G-SIBs seem to be on a more solid ground. For instance, almost all EU G-SIBs have recognised material exposure to C&E risks, while only slightly more than half of the non-EU G-SIBs consider being materially exposed to C&E risks. Still, both EU G-SIBs and non-EU G-SIBs scarcely substantiate C&E metrics and targets. Furthermore, the report highlights that a majority of all G-SIBs (regardless of the parent entity's location) continues to lack disclosures on Scope 3 financed emissions. This is despite the fact that most of them have joined the Net Zero banking Alliance (NZBA), implying that they have committed their lending and investment portfolios with net zero emissions by 2050.

Overall scores of EU and non-EU G-SIBs

Percentages of institutions



Source: ECB

Reporting on Scope 3 emissions remains a challenge

Scope 3 emission reporting seems to be the most challenging for all financial institutions, which should also not come as a surprise as this is rather complex. Scope 3 emissions measure the carbon emissions that stem from bank counterparties, which are the emissions of the companies and households that they lend to. Therefore banks need emission data from their counterparties, which is often not (yet) available. Looking at the sample of 103 SIs, the numbers are disappointing. Half of the banks do not disclose their scope 3 emissions, and from the ones that do, 53% did not substantiate their calculation methodologies and 29% did it, but only partially. The lack of methodologies casts serious doubts on the validity of the numbers, and the 2022 climate stress risk also revealed that the majority of the banks still uses proxies to calculate emissions, which results in a high dispersion of data. Furthermore, when asked about the reference date, some don't state any date, and others state an outdated one.

For sure, it is not an easy task to calculate scope 3 emissions without having non-financial companies reporting their emissions. But this should become easier as companies under the Non-financial Reporting Directive (NFRD) start to comply with the European Sustainability Reporting Standards (ESRS) from January 2024 onwards. Furthermore, a phase-in period was granted to financial institutions until June 2024, which they should use to explain the methodologies they are developing to measure and estimate their scope 3 emissions and the sources of data they plan to use.

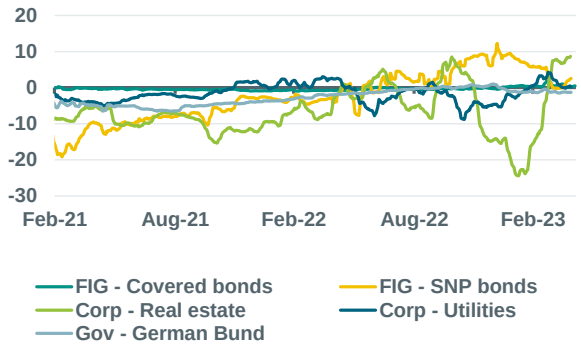
Final remarks

The ECB concludes that banks are still lagging and significant efforts still need to be taken to comply with the EBA ITS Pillar 3 and the C&E risk disclosure reports. This particularly holds for smaller institutions that will need to strengthen their C&E risk disclosures going forward. Transparent and standardized disclosures are the best way to make financial institutions accountable for their decisions, which will also strengthen comparability of data. This, in turn, will prove especially relevant for external stakeholders in their investment decisions. Furthermore, supervisors have been very serious about their expectations going forward and stand ready to take harsher actions if banks do not comply within the imposed deadlines. As Frank Elderson stated in a speech on the 27 March 2023, "*we expect all banks under our supervision to be fully aligned with our expectations by the end of 2024 at the latest. After 2024, a limbo of identifying a risk as material but not adequately addressing it will no longer be tolerated.*" As such, time is running out.

ESG in figures

ABN AMRO Secondary Greenium Indicator

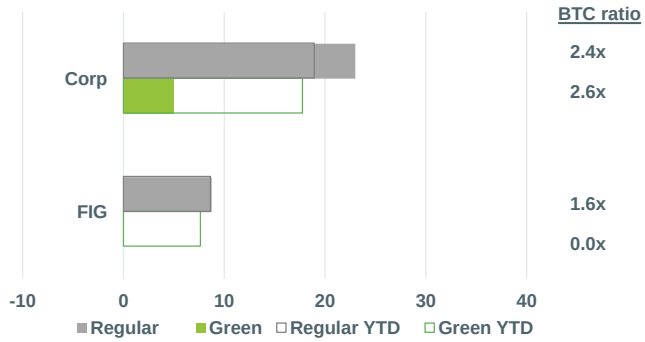
Delta (green I-spread – regular I-spread)



Note: Secondary Greenium indicator for Corp and FIG considers at least five pairs of bonds from the same issuer and same maturity year (except for Corp real estate, where only 3 pairs were identified). German Bund takes into account the 2030s and 2031s green and regular bonds. Delta refers to the 5-day moving average between green and regular I-spread.
Source: Bloomberg, ABN AMRO Group Economics

ABN AMRO Weekly Primary Greenium Indicator

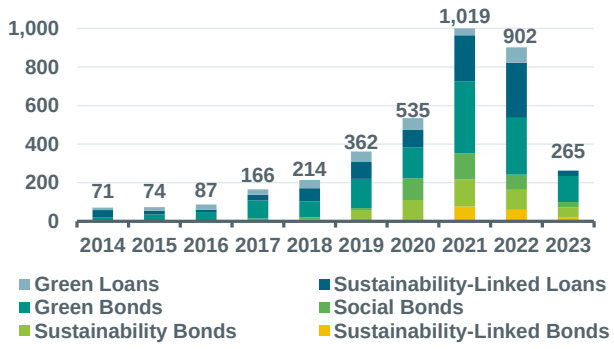
NIP in bps



Note: Data until 4-05-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

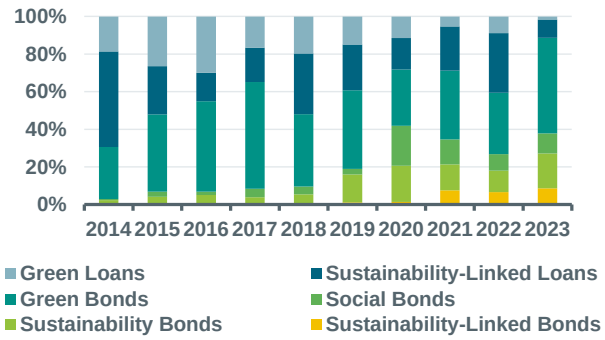
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

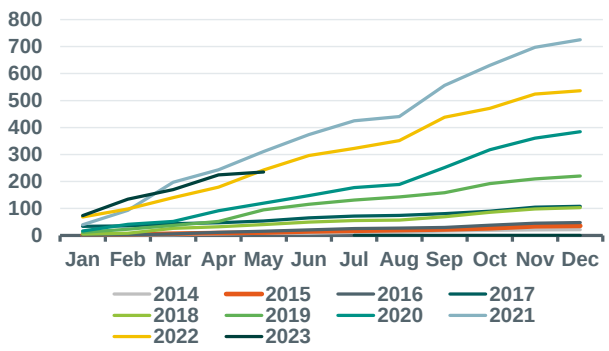
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

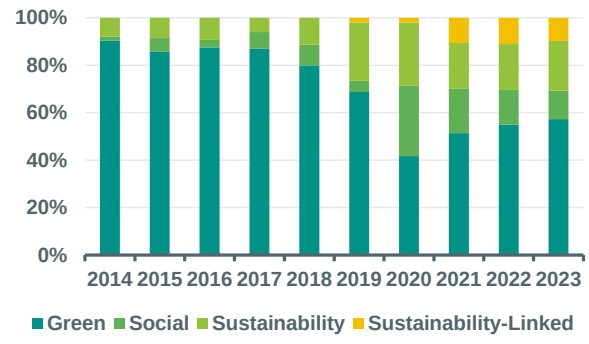
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

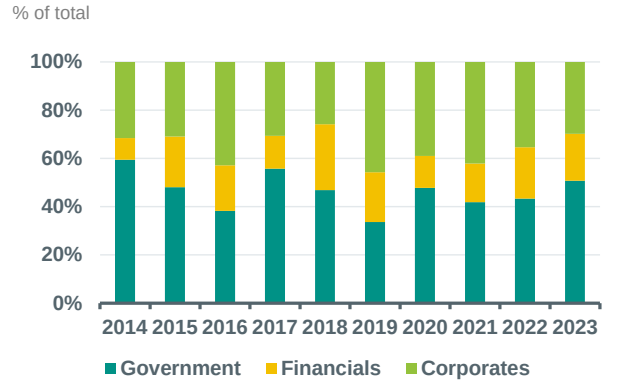
% of total



Source: Bloomberg, ABN AMRO Group Economics

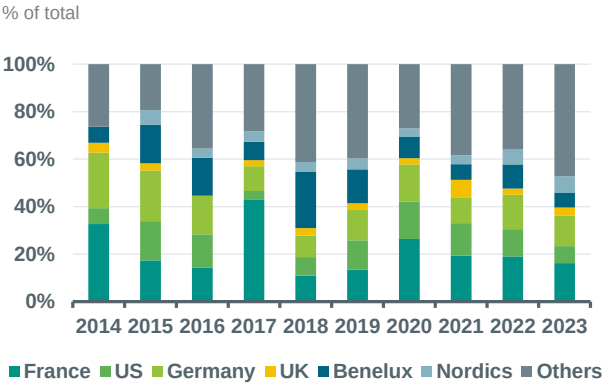
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Breakdown of ESG bond issuance by sector



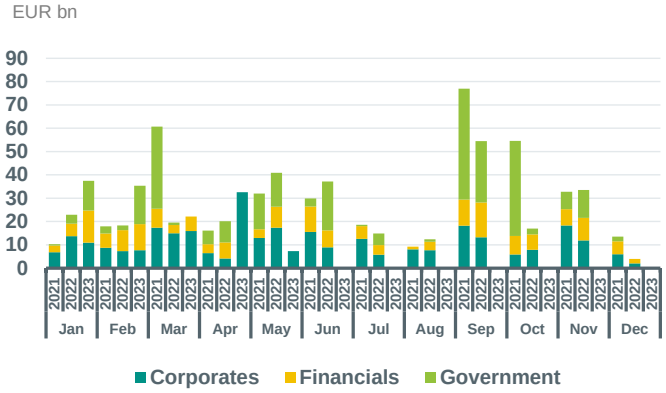
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country



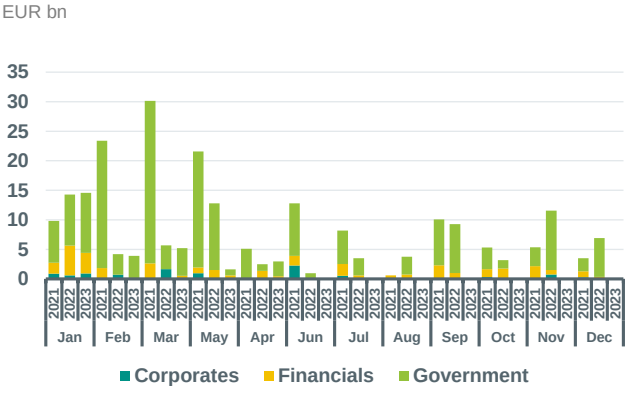
Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector



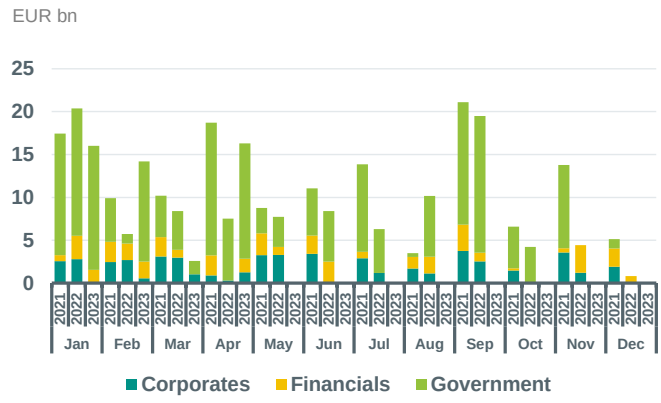
Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector



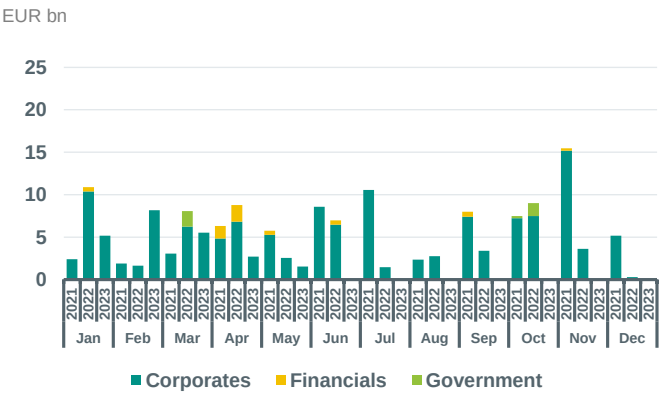
Source: Bloomberg, ABN AMRO Group Economics

Monthly Sustainability Bonds issuance by sector



Source: Bloomberg, ABN AMRO Group Economics

Monthly Sust.-Linked Bonds issuance by sector



Source: Bloomberg, ABN AMRO Group Economics

Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

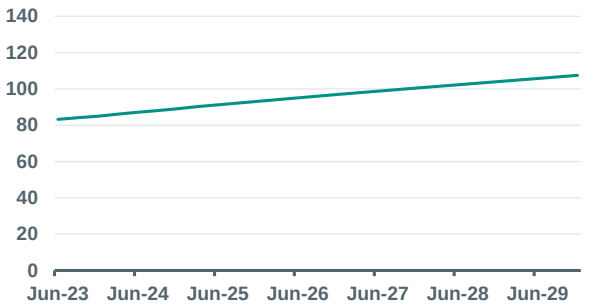
Carbon contract current prices (EU Allowance)

EUR/MT

Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)

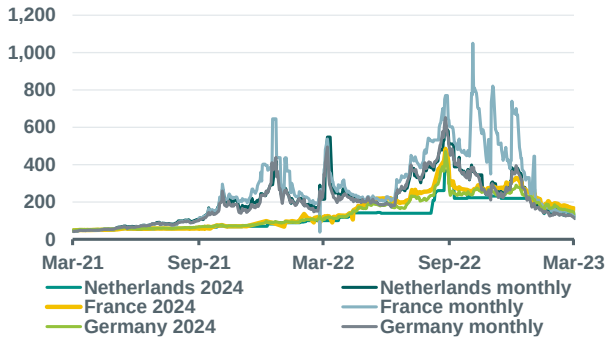
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

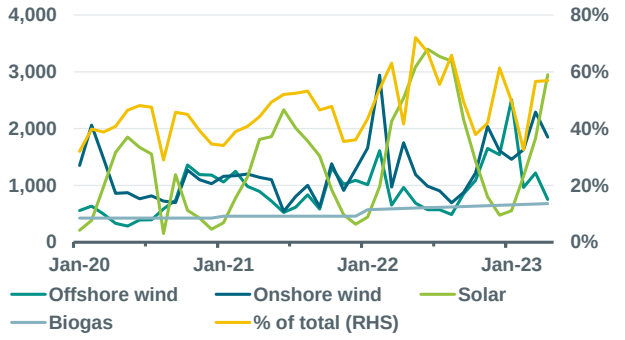
EUR/MWh



Source: Bloomberg, ABN AMRO Group Economics. Note: 2024 contracts refer to cal+1

Electricity generation from renewable sources (NL)

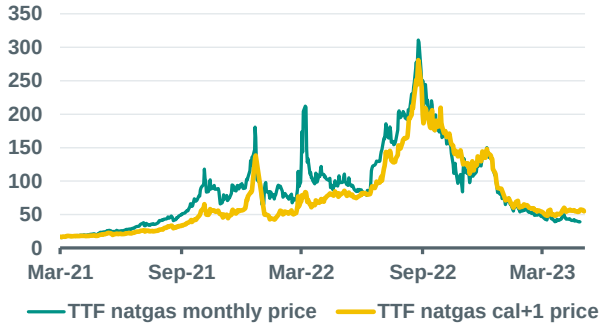
GW % of total



Source: Energieopwek (Klimaat-akkoord), ABN AMRO Group Economics

TTF Natgas prices

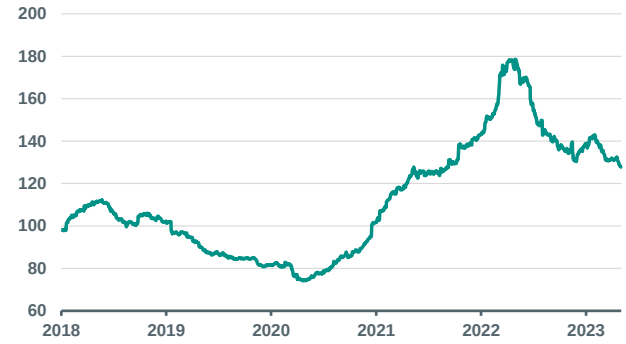
EUR/MWh



Source: Bloomberg, ABN AMRO Group Economics

Transition Commodities Price Index

Index (Jan. 2018=100)



Note: Average price trend of 'transition' commodities, such as: corn, sugar, aluminium, copper, nickel, zinc, cobalt, lead, lithium, manganese, gallium, indium, tellurium, steel, steel scrap, chromium, vanadium, molybdenum, silver and titanium. Source: Refinitiv, ABN AMRO Group Economics

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