SustainaWeekly

Lack of personnel an obstacle to energy transition

- **Economist: Professionals for the energy transition are essential but also unfortunately hard to find. The shortages per profession in the energy transition vary. Shortages also vary by region and can be more evenly distributed if workers are enticed to travel. CO2 reductions in other sectors could slow labor demand in some sectors, making more workers with similar skills available to alleviate some of the shortages in transition professionals.**

- **Strategist: Issuance of euro-denominated bank bonds slowed down in Q3, also affecting issuance of ESG labelled bank bonds, which dropped by 39% versus Q2. But the share of ESG bank bonds in total issuance held up firmly. Moreover, issuance of ESG-labelled bank bonds is still well on track to exceed last year's figure. Most ESG bank bonds are in senior format and have a green label.**

- **Policy & Regulation: EU carbon emission prices are governed by supply and demand forces. The supply of allowances is pre-determined by policy, while demand for allowances would be driven downwards by higher abatement efforts and more investments in renewables. The level the carbon price affects the feasibility and business case for low emission technologies and, in consequence, the transition towards these technologies.**

- **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.**

Professionals for the energy transition are essential but also unfortunately hard to find. In this week's SustainaWeekly we quantify the shortages of transition professionals in the Netherlands compared to the overall labour market using our labour market indicator. We go on to look at regional differences as well as whether there are other carbon-intensive sectors who could release workers who have similar skill sets. In a separate note, we analyse recent ECB bank bond issuance trends. In our final note, we assess the main determinants of the European Union emission allowance (EUA) price from the demand and supply side, along with shedding the light on the relationship between EUA price and the transition process.

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

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Energy transition falters due to lack of personnel

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- **In the coming years, considerable sustainability efforts must be made. Professionals for the energy transition are therefore essential but also unfortunately hard to find.**
- **The shortages per profession in the energy transition vary. Shortages also vary by region. The shortages can be more evenly distributed if workers are enticed to travel.**
- **As a thought experiment, we look at what CO2 reductions in other sectors might mean for the tightness in the energy transition**
- **This is expected to slow labor demand in some sectors, which could be positive for the energy transition where additional labor demand is expected**

Not enough hands for energy transition

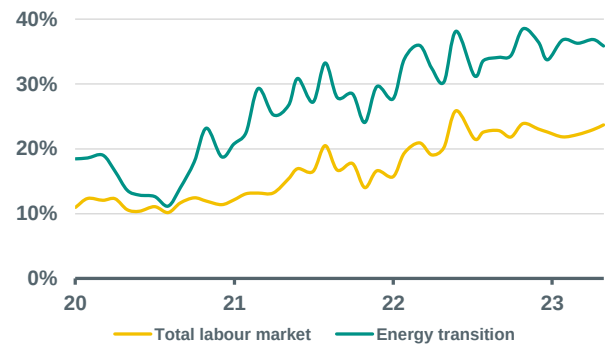
Considerable sustainability efforts must be made in the coming years to reduce CO2 emissions by 55 percent in 2030 compared to 1990 levels - in line with the European Commission's Green Deal. The availability of personnel is a growing stumbling block to achieving the required energy transition. Electricians, installation, insulation, and maintenance technicians and insulators are all badly needed but hard to find, the ABN AMRO labor market indicator shows.

Professionals for the energy transition are unfortunately in short supply. At the end of May, almost 36 percent of vacancies in occupations related to energy transition were unfillable. This means that almost 36 percent of all vacancies that are outstanding within the energy transition cannot be filled by the job seekers who want to fill a profession in the energy transition and are able to fill this vacancy within a certain search radius (willingness to travel). We rely on our labor market indicator, which uses data from Werk.nl to take into account job seekers' job preferences and how far they are willing to travel for a vacancy. Relative to the tightness for all occupations, we see a sharp difference. Indeed, in May, 23.7 percent of all job openings were unfillable. The labor market shortages are in general substantial but for occupations in the energy transition, they are even greater.

Zooming in on these energy transition jobs, the shortages vary by occupation. Engineers for electricity grids, solar panels and insulators in construction are in great need of new personnel. On the other hand, environmental experts are not in short supply.

Labour market more tight for the energy transition

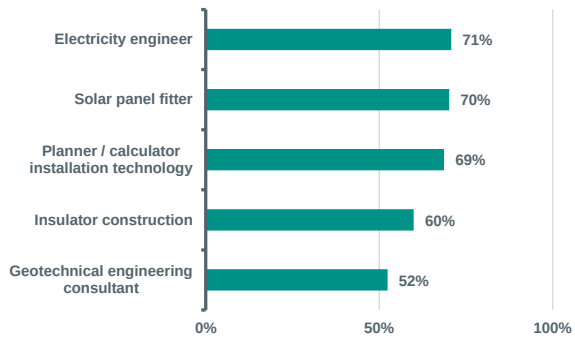
Percentage unfillable vacancies



Source: ABN AMRO labour market indicator

Tight occupations in the energy transition

Percentage unfillable vacancies in May 2023



Source: ABN AMRO labour market indicator

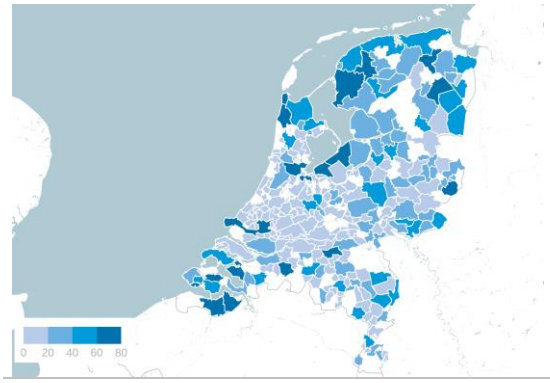
Regional differences reveal opportunities

Regionally, there are also large differences in the labor market tightness of energy transition occupations. The top five municipalities of Lelystad, Schagen, Den Helder, Terneuzen and Súdwest-Fryslân. We also see a higher percentage of unfillable vacancies in large cities. For example, in the municipalities of Rotterdam, Groningen, Breda, 's-Hertogenbosch and Amsterdam, the percentage of unfillable vacancies in energy transition is above 60 percent.

These large regional differences also mean that a relatively small adjustment can alleviate average shortages. For example, workers can be enticed to commute longer distances. By doing so, the tightness can be more evenly distributed across the country.

Regional differences in the energy transition

Municipalities with at least 5 outstanding vacancies in the energy transition



Source: ABN AMRO labour market indicator

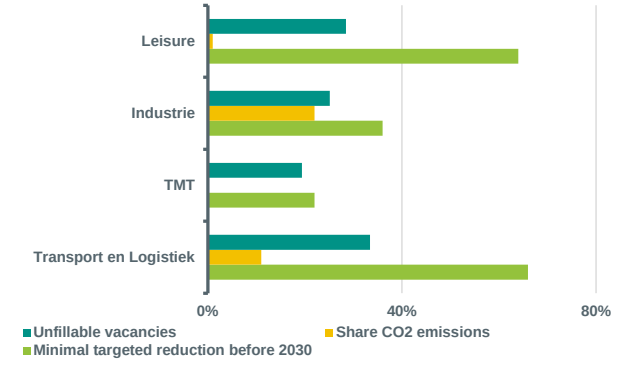
Reduction of CO2 emissions could create labor market space

On the road to lower emissions, there will be sectors that will reduce their CO2 emissions. As a thought experiment, we look at what this could mean for the tightness in the energy transition. We select a group of sectors with low or high CO2 emissions, but with occupations that connect to occupations in the energy transition. This allows us to see what lower labor demand in high CO2 sectors can mean for the tightness in the energy transition.

It is expected that for some sectors, the reduction of CO2 emissions can slow labor demand. This is positive for the energy transition in which additional labor demand is actually expected. The distributional issue of labor is ultimately a political choice, but by shining light on information inequality, we hope to generate more insight into the possibilities for labor market dynamics.

Sectoral differences

All in percentages. Unfillable vacancies in May 2023



Source: CBS, ABN AMRO labour market indicator

To make this a little more concrete, we use the **UWV's** transfer **occupations**. This data consists of alternative occupations that connect to one other occupation. This connection can come, for example, from similar skills needed to perform the work. We also use data from CBS on CO2 emissions per sector and the minimum reduction for 2030. In this thought experiment, we look at the leisure, manufacturing, TMT and transport and logistics sectors. These sectors contain occupations that, according to the UWV, have potential for a transition to an occupation in the energy transition.

There are two occupations in the energy transition that have many connections to other occupations. The first profession is solar panel mechanic. Occupations from which a transition can be made from sectors with relatively high CO2 emissions - industry and transport and logistics - include technical service employees and warehouse and shipping employees. A switch to the profession of solar panel mechanic can also be made from less CO2-intensive sectors. These include cab and private drivers, and audio-visual, image, sound and lighting technicians from the leisure and TMT sectors.

The second profession that finds a lot of connection is account manager business services; for example, as an energy consultant. Again, a transition can be made from both carbon intensive and less intensive sectors. Think of professions such as travel consultants, travel agents and hotel receptionists. But also trainers in communication skills and managers in logistics, transport, shipping and distribution.

ESG-labelled bank bond supply slowed in Q3, but its share held firm

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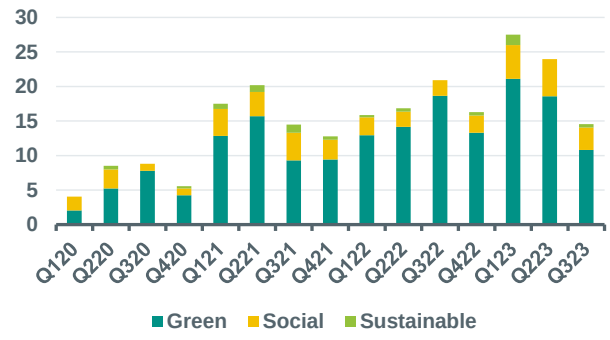
- **Issuance of euro-denominated bank bonds slowed down in Q3, also affecting issuance of ESG-labelled bank bonds, which dropped by 39% versus Q2**
- **But the share of ESG bank bonds in total issuance held firm**
- **Moreover, issuance of ESG-labelled bank bonds is still well on track to exceed last year's figure**
- **Most ESG bank bonds are in senior format and have a green label**
- **Demand for ESG bank bonds was stronger than that for non-ESG peers, although the average new issue concession was slightly higher last quarter**

Issuance slowing but ESG share constant

Overall issuance of euro bank debt (including covered bonds) slowed down in the third quarter in comparison to previous quarters, mainly as a result of the typical summer-lull. However, when compared to the previous two years, overall issuance was also lower in the past quarter than in 2022 and 2021 (EUR 70bn versus EUR 86bn and EUR 74bn, respectively). This likely reflects the relatively large volumes of new supply in the first half of the year. Indeed, new issuance of euro bank debt during the first three quarters of 2023 was, at EUR 378bn, well above that of EUR 325bn in the same period last year. The slowdown in issuance in Q3 was also mirrored by a decline in the volume of new supply of ESG-labelled euro bank bonds, which dropped by 39% compared to Q2 (following a 13% decline in Q2 versus Q1). In total, EUR 15bn of ESG labelled bank bonds were issued in Q3, taking the total to EUR 66bn in the first three quarters of 2023. Despite the decline in the volume of new issuance, the share of ESG-labelled bank bonds remained roughly steady at 21% of total euro bank debt issuance in Q3 (this was 20% in Q2 and 15% in Q1, see graph below right).

ESG-labelled bonds issuance, EUR bn

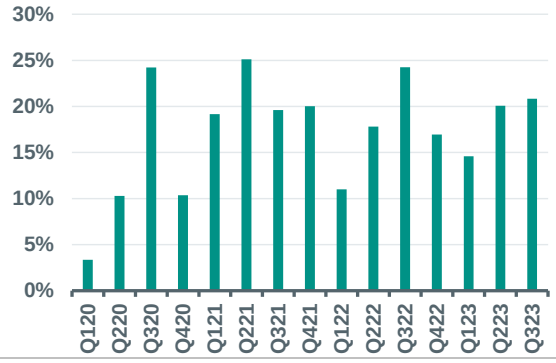
In EUR bn



Source: Bloomberg, ABN AMRO

Share of ESG labelled bonds in total bank debt issuance

% share of ESG labelled bonds in total issuance of euro bank bonds



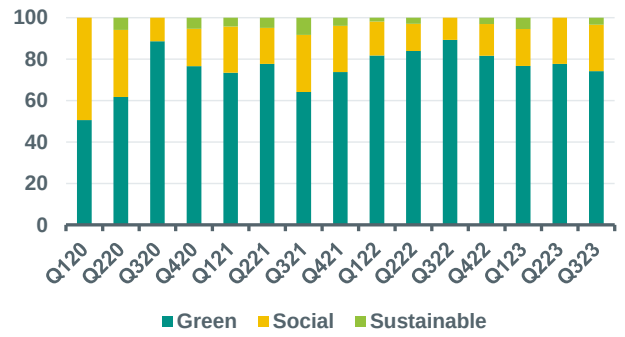
Source: Bloomberg, ABN AMRO

Focussing on the split between ESG labels, shows that in Q3, EUR 10.8bn of all ESG bank bonds had a green label (74%), while EUR 3.25bn had a social label (22%), and EUR 500mn (3%) were in sustainable format. So far this year, these shares have remained roughly constant, clearly showing that the green label is by far the most important ESG label used for newly issued bank debt. This should not come of a surprise, given that the focus of most issuers is on climate change and financing the energy transition. Moreover, the green bond market has been most developed over the years, supported by clear guidelines on what economic activities can be financed by green bonds. This is less the case for social bonds.

Another interesting figure is the split of ESG issuance by debt rank, and covered bonds and senior bonds more specifically. This shows that most newly issued ESG-labelled bonds is issued in senior format. Taking an average since the start of 2020 reveals that they account for 70% of ESG-labelled bank bonds (only taking into account senior debt and covered bonds). This is likely related to the fact that senior bonds trade at wider spread levels than covered bonds, implying that the potential funding advantage is larger in the senior space.

Share of ESG label in total ESG issuance

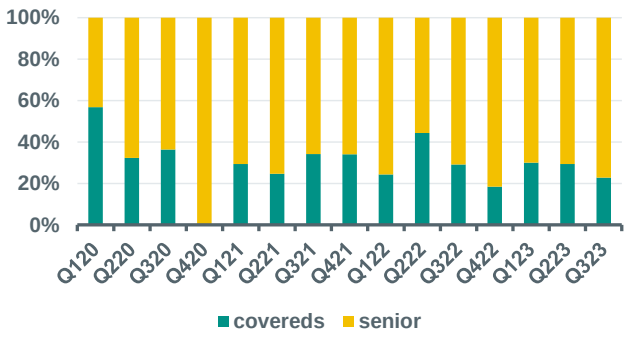
% share in total issuance of green, social, and sustainable euro bank debt issuance



Source: Bloomberg, ABN AMRO

ESG labelled issuance, split by debt rank

% share



Source: Bloomberg, ABN AMRO

Stronger demand, but higher new issue concessions

Furthermore, in the third quarter, the ESG label also seemed to be an advantage for issuers. The average bid-to-cover (BTC) ratio this quarter for ESG bonds was around 3.0x. This was higher when compared to non-ESG bonds issued in Q3, which had an average BTC ratio of 2.2x. More generally, the graph below left shows that demand for ESG bank bonds tends to be stronger than that for non-ESG peers in most quarters (with some exceptions). Indeed, the average BTC for ESG-labelled bank bonds was 2.8x since 2020, while this was 2.4x for non-ESG bank bonds. Moreover, a breakdown by ESG-type reveals that green bonds are most in favour, as their average BTC was 3.0x.

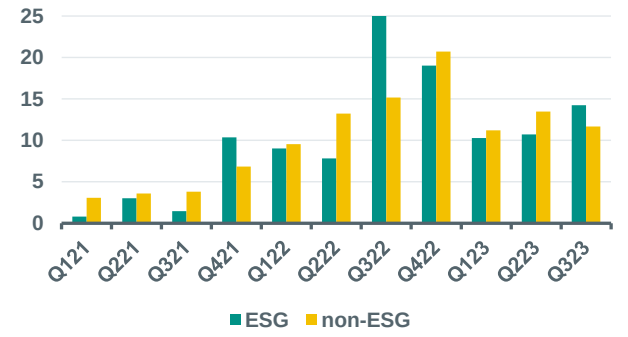
Demand for (non)-ESG labelled bank bonds

Average bid-to-cover ratio of newly issued (non)-ESG labelled euro bank bonds

Source: Bloomberg, ABN AMRO

New issue concession for bank bonds, ESG vs non-ESG

Average new issue premium of newly issued (non)-ESG labelled euro bank bonds, in bp



Source: Bloomberg, ABN AMRO

In terms of pricing advantage, banks needed to pay slightly more on average for ESG-labelled bonds than for non-ESG peers last quarter. This was also the case in Q3 last year, although the graph above right shows that the new issue concession for ESG bank bonds tend to be mostly lower than that for non-ESG bonds. The average new issue premium paid for ESG bank bonds was 14bp in the last quarter, roughly double that of the average since 2020. The average for non-ESG bonds was around 12bp in the last quarter, versus an average since 2020 of 9bp. The calculated averages are vulnerable to the type of debt instrument issued as well as the credit profile of the issuers. Last quarter, there were relatively many lower tier banks that entered the market with ESG bonds, with the ESG format giving them better access to the market. The picture also changes already when correcting for debt instruments issued, with the average new issue premiums paid on ESG covered bonds and senior debt being slightly below the average of non-ESG peers.

Looking forward, we expect new issuance to slow down in the final quarter of the year, which will also hold for issuance of ESG bank bonds. Across debt ranks, we still expect that EUR 8-10bn of euro-denominated bank bonds will be issued in ESG format before year-end, which would take total ESG supply to EUR 75bn in 2023, up from EUR 70bn in 2022.

EUA price determinants and the transition process

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- **The European Union Emission Trading Scheme (EU-ETS) is the main policy employed to reduce emissions and boost the transition process in covered sectors**
- **The European Union emission allowance (EUA) price is governed by supply and demand forces. The supply of allowances is pre-determined by the emission cap and the linear reduction factor.**
- **Demand for allowances comes from the covered sectors and changes depending on inter and intra-sectoral dynamics. In general, demand for allowances would be driven downwards by higher abatement efforts and more investments in renewables**
- **The level of EUA price affects the feasibility and business case for low emission technologies and, in consequence, the transition towards these technologies.**
- **Complementary measures and timely interventions, such as setting targets for emission efficiency, the use of Carbon Contracts for Difference (CCD), and facilitating the coordination between different stakeholders, will be needed to reach climate goals on time**

Introduction

The European Union Emission Trading Scheme (EU-ETS) is the flagship instrument to reduce emissions in the European Union. The EU-ETS is a cap and trade system in which a cap on emissions is set and translated into emission allowances. The cap is set to decrease over time with a linear reduction factor (set to 4.2% in the updated reforms) in order to achieve emission reduction targets in the covered sectors. The allowances are allocated through auctions or, under specific conditions, given for free to regulated installations. They are further traded in secondary markets.

The European Union emission allowance (EUA) price has an essential role not only in incentivizing relevant installations to reduce their emissions in the member countries, but also in boosting the transition process in the covered sectors through its impact on the feasibility and business case of low carbon technologies. In this note we assess the main determinants of the EUA price from the demand and supply side, along with shedding the light on the relationship between EUA price and the transition process.

Drivers of EUA price

As in any market, the EUA price is a product of supply and demand forces for allowances. From the supply side, the number of allowances available in the market is governed by the emission cap, the linear reduction factor, and the decisions governing the time of loading allowances to the market (front loading, or back loading)[1].

Demand for allowances comes from the covered sectors[2] and changes depending on inter and intra-sectoral dynamics. In general, demand for allowances would be driven downwards by higher abatement efforts and more investments in renewables. Noting that developments in non-covered sectors could also affect the EUA price. For instance, even though transport and real-estate sectors are not directly covered by EU-ETS, the developments in these sectors affect the carbon market through their effects on power demand. To better understand the dynamics, we focus on the electrification of the transport sector. This process will increase the demand for electricity, and unless the switch to renewables is growing at a faster rate, conventional fossil based power may become needed for longer period of time. Thus, the demand for allowances from the power sector will increase, driving a higher price for EUA.

Similarly, fossil fuel price affects the demand for allowances. For example, a negative supply shock to the gas market may trigger higher coal power generation raising the demand for allowances as coal is more carbon intensive than natural gas. The economic cycle and sentiments towards economic outlook also affects demand for allowances as lower output in recession times translates into lower demand for allowances. Higher fossil fuel prices could also reduce energy demand (efficiency measures, or lower output, having the opposite effect on prices.

[1] Front loading mean that more allowances are put in the market sooner than planned, while back loading induce a postponement of supply and the market become tighter.

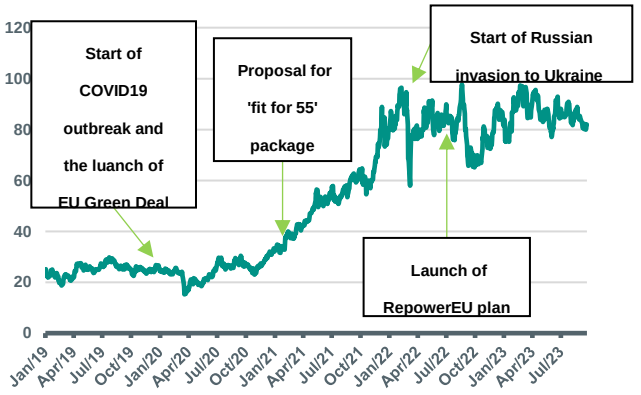
[2] EU-ETS covers the aviation, power generation, and heavy industry sectors. As of 2024, it will be extended to emissions from maritime shipping.

Shocks/development	Expected effects	EU-ETS market dynamics	EUA price effect
Weather conditions (Heat waves, cold winter, slower wind, cloudy sky)	Higher conventional power production	Higher demand from the power sector	Positive
Fossil fuel prices (higher gas price/ lower oil price)	Power sector switching on coal generation/ Industrial sector using more oil	Higher demand from the power/industrial sectors	Positive
Overall higher fossil fuel prices	Efficiency improvements/ Electrification/ Lower output	Lower demand from associated sectors	Negative
Limited grid capacity	Lower renewable investments, slower electrification	The decrease in demand is slower than that of supply	Positive
Negative economic outlook	Lower industrial output	Lower demand for allowances	Negative
Breakthrough emission reduction technology	Faster transition	The decrease in demand is faster than that of supply	Negative
Supply- front loading	All covered sectors	Higher supply	Negative
Higher linear reduction factor	All covered sectors	Lower supply	Positive

Moreover, the more we increase our reliance on renewable power, the more sensitive demand becomes to weather conditions. For example, heat waves and extreme cold could trigger a surge in demand for power which, in absence of sufficient storage, triggers more conventional power generation, more required allowances and higher EUA prices. Additionally, a breakthrough technological discovery that reduces emissions in one of the covered sectors would induce a faster transition, lower demand for allowances, and lower EUA prices.

EUA price developments and major events

Unit: EUR/ton CO2



Source: Bloomberg, ABN AMRO Group Economics

Under the same transition scope, there is a link between anticipated bottlenecks to the energy transition and the carbon market. For example, delays in grid capacity extensions would slow down renewable power capacity building, which in turn will hinder the development of green hydrogen that is needed for the transition of heavy industry. The combination of the slower industrial transition and the ongoing reduction of the cap will increase the EUA price. Noting that one way to avoid/mitigate this kind of dynamics would be for Europe to rely on imports for green hydrogen. However, in either case, the international competitiveness of European industries is affected[3]. First, by the high cost of allowances, and second by the reliance on more expensive imports.

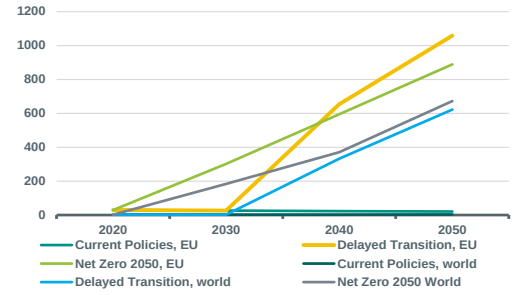
The table above summarizes main developments and their potential effect on EUA price.

EU-ETS and the transition process

Carbon pricing is the main driver for the energy transition process as it provides incentives for different economic agents to switch towards a more sustainable low carbon practices. Accordingly, the level of carbon pricing plays an important role in governing the speed of the transition towards a certain climate goal. Scenario analysis is used to compare different pathways to reach such a goal under different levels of carbon pricing over time. The figure below depicts the carbon prices associated to different transition scenarios developed by the Network for Greening the Financial System (NGFS). The figure shows that the level of carbon price differs depending on the transition process under different scenarios. The timing of the introduction of an effective carbon price is of a high importance here. The delay in addressing emissions means that a higher carbon price will be needed to achieve the same climate goal. Accordingly, the carbon price is typically higher in the Net Zero scenario – particularly this decade - than in less ambitious scenarios. Furthermore, the carbon price to reach the same emission reduction target differs between different regions of the world due to differences in opportunities and sectoral composition to reduce emissions.

Carbon prices in NGFS scenarios

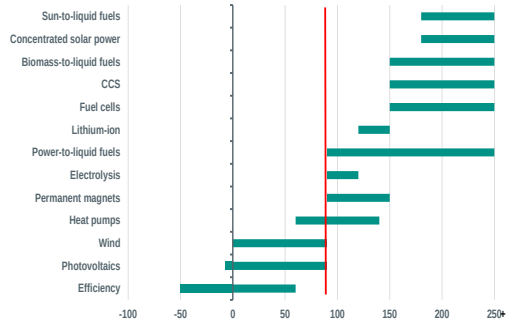
USD 2010/t CO2



Source: NGFS, REMIND-MAgPIE 2.1-4.2

Indicative Marginal Abatement Cost per technology

Cost in EUR/tonne, red line is current ETS price of 90 EUR



Source: IEA, CRU, McKinsey, own estimations

The EU-ETS represents the main driver for the transition of covered sectors towards a low carbon world. In early phases of the EU-ETS, the over-supply of allowances kept the EUA price at a low level that was not strong enough to speed up the transition. However, following the EU Green Deal and subsequently Russia's invasion of Ukraine, reforms to the EU-ETS have been put in place: the fit for 55 package which increased the emissions reduction target to reach 62% by 2030 and the REpowerEU plan which entailed the use of 20 billion euros of allowance revenues to reduce the reliance on Russian gas.

It is worth noting that the development in the ETS price gives an indication of the speed of the transition in covered sectors. That is, as the speed of supply is decided upfront to meet the emission reductions, an increase in EUA price levels indicates that the reduction in demand is not matching the reduction speed in supply, indicating a slower transition. The other side of the coin would be that demand for allowances is also dependent on the transition speed, which in turn is linked to the availability of technological alternatives. For example, some hard to abate industries, which are mostly covered by the ETS, like steel, have green hydrogen as a strategic alternative to fossil fuels. However, the slow development of the associated

[3] The implementation of CBAM can alleviate this effect.

infrastructure, such as pipelines to transport green hydrogen from where it is produced to where it is needed, will prolong the reliance on old technologies, slow down the transition, and entail higher price for allowances.

More specifically, the level of EUA price affects the feasibility and business case for low emission technologies. The figure above (right hand panel) depicts the link between the marginal abatement cost for different low carbon technologies against the EUA price. The figure shows that under the a permit price of 90 euros per ton of CO2, the business case of most of the transition technologies is still weak. Only efficiency measures, investments in wind and solar in the power generation have a positive business case. To make other decarbonization technologies more feasible, their marginal abatement cost should be reduced, or the EUA price should increase, or a combination of both.

Based on the costs of the needed decarbonization technologies to trigger the required transition, and given the upcoming reduction in supply, a rise in the EUA price in the coming years can be reasonably anticipated. This in turn will bring into play technologies such as CCS or biofuels.

It is worth noting though that the ETS price alone may still not be enough to trigger the required change especially when bottlenecks are present. Therefore, complementary measures and timely interventions, such as setting targets for emission efficiency and facilitating the coordination between different stakeholders, will be needed to resolve these issues and reach climate goals on time. Instruments such as Carbon Contracts for Difference (CCD) can also be used to boost the transition further[4]. The main goal for this instrument is to reduce uncertainty to investors in order to ameliorate the business case of low carbon technologies. However, there are associated concerns that relate to market and futures distortions.

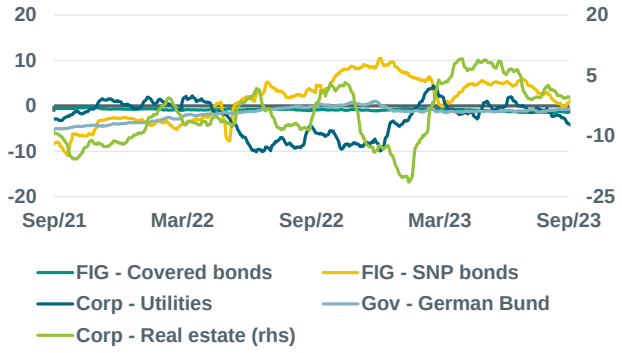
This note is part of a more extension publication on the EU-ETS. You can find the full version **here**.

[4] CCD is an instrument the aim at setting a strike price for carbon emission permits under which the government will pay the difference to the industry.

ESG in figures

ABN AMRO Secondary Greenium Indicator

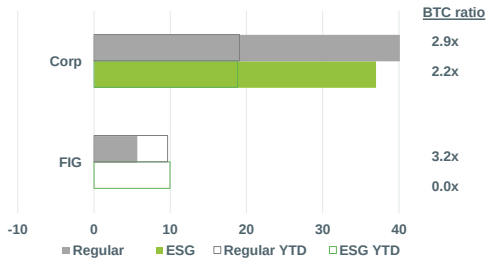
Delta (green I-spread – regular I-spread)



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

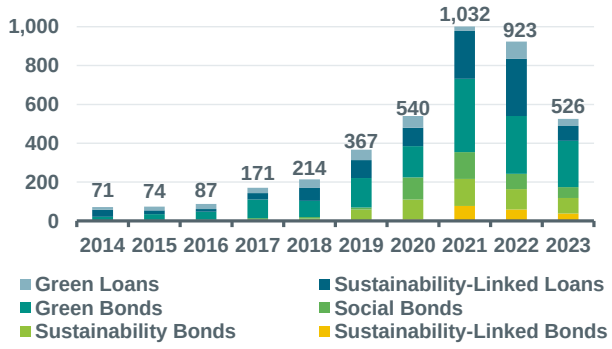
NIP in bps



Note: Data until 29-09-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

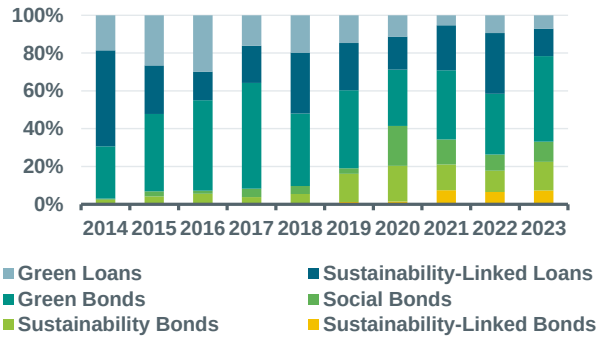
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

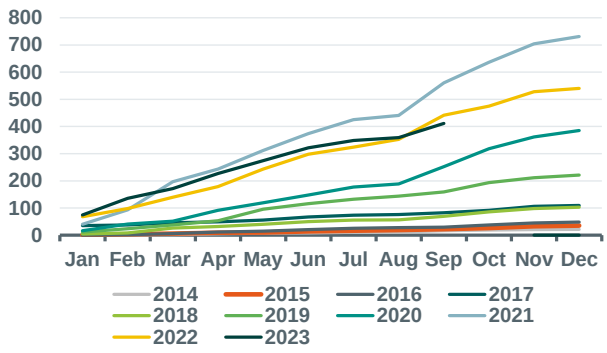
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

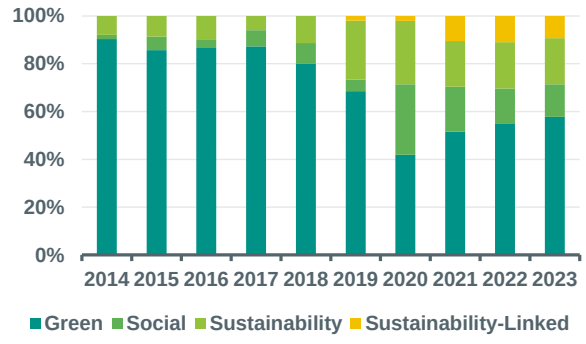
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

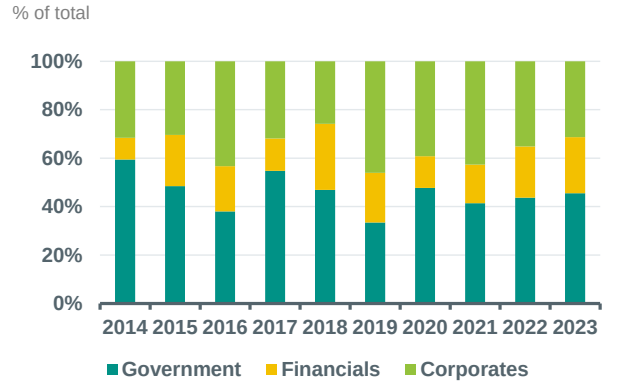
% of total



Source: Bloomberg, ABN AMRO Group Economics

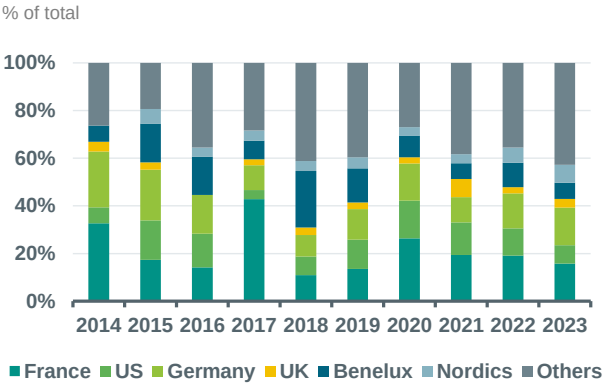
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Breakdown of ESG bond issuance by sector



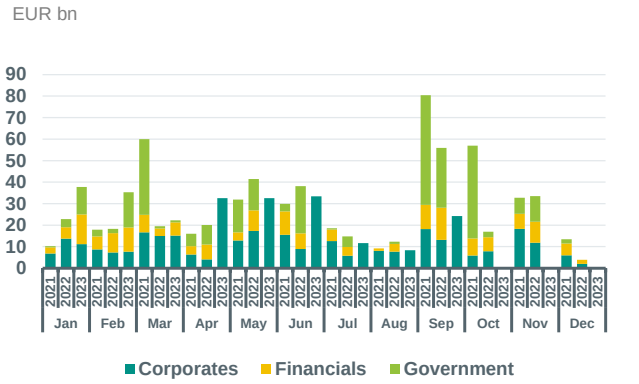
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country



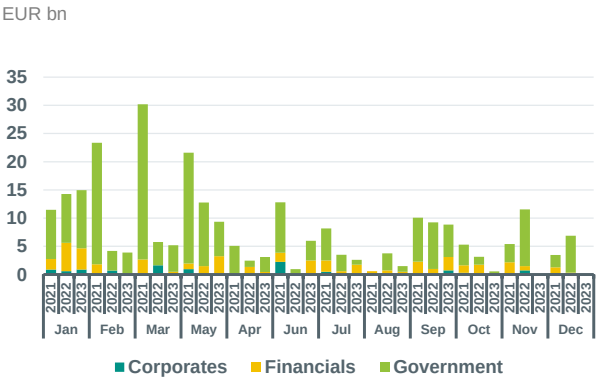
Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector



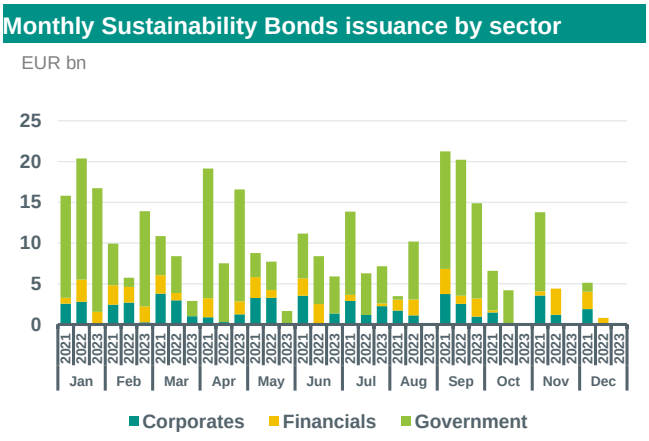
Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector



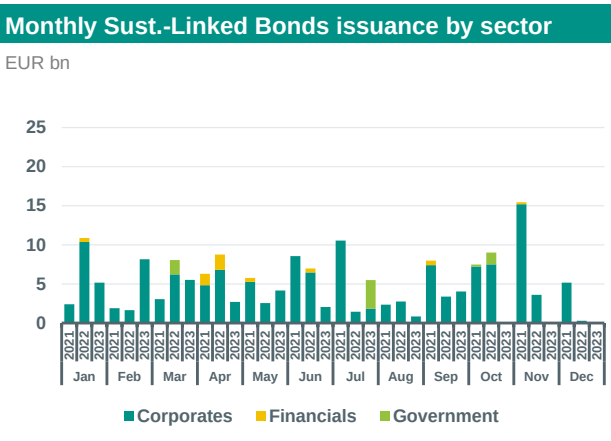
Source: Bloomberg, ABN AMRO Group Economics

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

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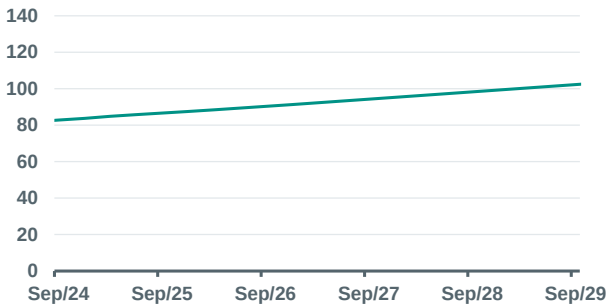
Carbon contract current prices (EU Allowance)

EUR/MT

Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)

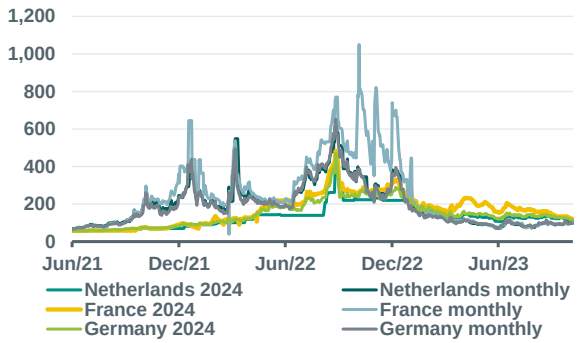
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

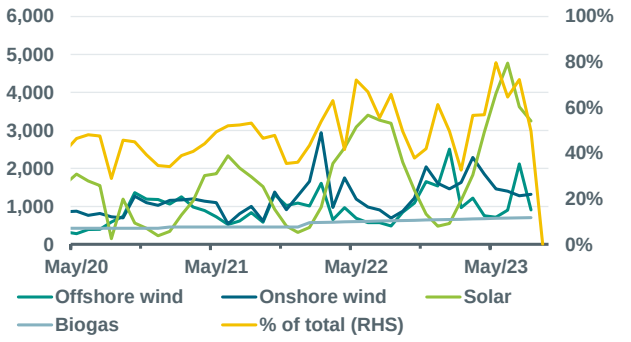
EUR/MWh



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

Electricity generation from renewable sources (NL)

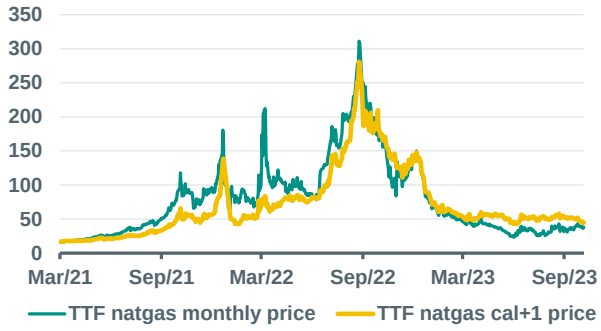
GW % of total



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

TTF Natgas prices

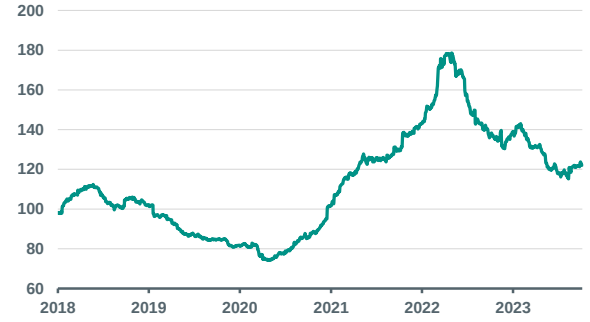
EUR/MWh



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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