SustainaWeekly

WfH's environmental benefits are an additional headache for offices

- **Strategist: We assess the environmental benefits of the working from home (WfH) shift. Hypothetically a 2 day working from home arrangement could reduce total emissions per square metre per annum from 251kg to 176kg, also taking into consideration the commute. Besides lower rents and transport expenses, this environmental benefit must also sound attractive for tenants who are still in doubt about their future office floorspace requirements.**

- **Policy: ECB has been buying, since October 2022, securities for its CSPP portfolio using its 'green tilting' approach, in line with the methodology it set out earlier in the year. We show that utilities and consumer are sectors that have been benefiting from the 'green tilt', while this is the opposite for energy, technology and communications. Moreover, the ECB also seems to have bought significantly more green bonds during this period.**

- **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 assess the environmental benefits of the working from home (WfH) shift, with an estimate of the lower emissions from lower energy usage at the office and less commuting by car. European and US office attendance remains below pre-pandemic levels and the environmental case of WfH means that occupancy in the office space could therefore be under further pressure. We go on to take a closer look at the ECB's securities purchase behaviour since it started to green its corporate bond portfolio. It is possible to infer some of the "climate friendly" preferences of the ECB by looking at which securities were added during this period.

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

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WfH's environmental benefits are an additional headache for offices

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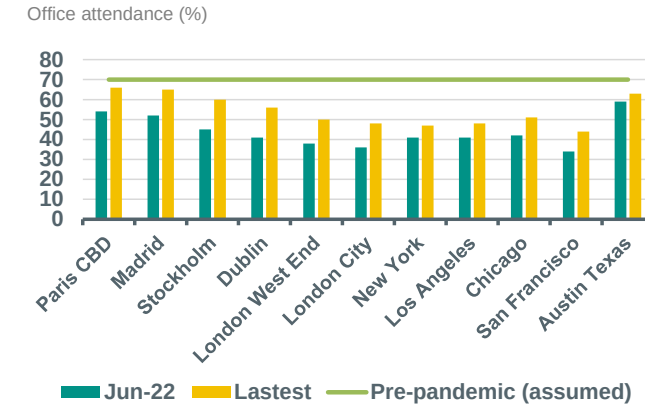
- **European and US office attendance remains below pre-pandemic levels**
- **We assess the environmental benefits of the working from home (WfH) shift, with an estimate of the lower emissions from lower energy usage at the office and less commuting by car**
- **Hypothetically a 2 day working from home arrangement could reduce total emissions per square metre per annum from 251kg to 176kg, also taking into consideration the commute**
- **Besides lower rents and lower employee transport expenses, this environmental benefit must also sound attractive for tenants who are still in doubt about their future office floorspace requirements**

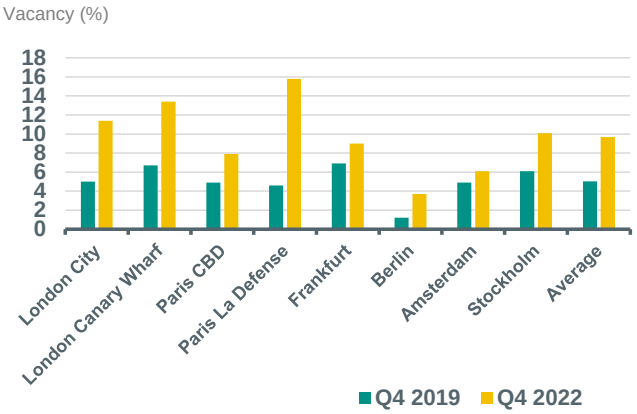
The pandemic-induced working from home (WfH) has subsequently become a routine for many office workers and the latest data reveals that, despite Western society relaxing post-pandemic measures for over a year, office attendance has not returned back to pre-pandemic levels. The left-hand chart below shows the office attendance across many large European and US cities. In Europe, attendance seems only near normal in Paris and Madrid. In Stockholm, the attendance would suggest a 1 day of working from home, while in London nearly 2 days are worked from home, all vs. pre-pandemic situations and rounded. Lower attendance automatically means a lower need for office space. Although tenants and landlords are re-organizing space to accommodate a better 'in the office' experience, such as larger meeting rooms and lounges, current attendance trends could warrant higher vacancies for office real estate. This is to a certain extent already reflected in actual vacancies doubling vs pre-pandemic levels, shown on the chart on the right. Unemployment remains low, hence the rise in vacancies seems largely driven by the working from home trends.

Office attendance still not at pre-pandemic levels



Source: Kastle, Savills, Bloomberg, ABN AMRO Group Economics. Generalized pre-pandemic assumption as per Savills and takes into consideration structural office availability due to employee travel, part-time arrangements, holidays, etc

NW European office vacancy doubling across the board



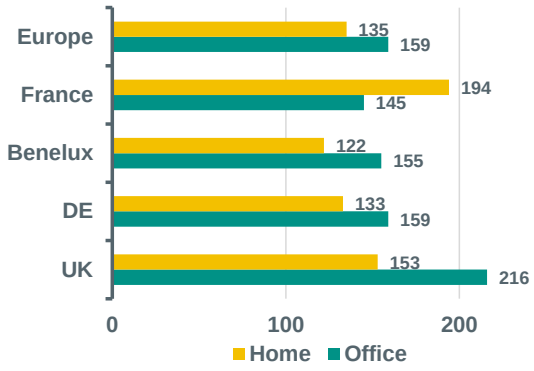
Source: Savills, Bloomberg, ABN AMRO Group Economics

Working from home actually saves energy and emissions

Some might argue that employees will be more encouraged to rush back to the office due to the more expensive energy bills faced by households. However, the overall savings in energy realized by having employees work from home due to the lower energy intensity in homes actually creates a leeway for employers (the tenants) to beef-up the home working compensation schemes. In the first chart on the next page we show that based on data by Deepki (see here) the average energy intensity per square meter for housing tends to be lower than the intensity for office in the UK, Germany and the Benelux. France seems to be the exception.

A home is more energy efficient than an office

Total final energy in KWh per square metre per annum



Source: Deepki, ABN AMRO Group Economics

Assuming that the above intensities are still based on the old working pattern data, we can roughly calculate intensities by first calculating the intensity per sqm per hour based on a 5 day working from office routine and then reconfiguring for a 2 day working from home routine. This is shown step-by-step in the table below for the average Dutch office property. While office tenant usage (in line with working two days from home and the higher intensity) drops by 40%, employee home usage only goes up by 14%.

	Office	Home	Total
Energy intensity in KWh p sqm per annum	**155**	**122**	**277**
Annual hours spent based on being 5 days at office for 8 hours a day, 1hr of travel back and forth, weekdays at home for remaining hours, weekends out for 10 hours and two weeks of holidays away	2000	5650	7650
Energy intensity in KWh psqm per hour	0.078	0.022	
Annual hours spent based on being 3 days at office, 2 days working from home, 1hr of travel back and forth during days in office, weekdays at home, weekends out for 10 hours and two weeks of holidays away	1200	6550	7750
Energy intensity in KWh p sqm p.a.	**93**	**141**	**234**

Source: Deepki, ABN AMRO Group Economics

The distribution of electricity and gas usage in the office is roughly 40%/60%, while at home it is 20%/80%. Likely the ventilation demand is driving the higher share of electricity in the office space. Given the lower emission factor of natural gas (213 grams per KWh) vs Dutch electricity (418 grams per KWh according to an European Environmental Agency (EEA) reporting for 2021), working from home results, in the Benelux in 24kg less scope 1 and scope 2 emission per total square metre space used per annum, while driving up scope 3 upstream emissions by 6kg per total square metre used per annum, or a **net benefit of 18kg emission reduction**.

	Office	Home	Total
Energy intensity in KWh p sqm per annum @ 5 days in office	155	122	277
Emissions psqm per annum (kg) - old	**58.4**	**36.0**	**94.4**
Energy intensity in KWh p sqm per annum @ 3 days in office	93	141	234
Emissions psqm per annum (kg) - new	**35.1**	**41.6**	**76.7**

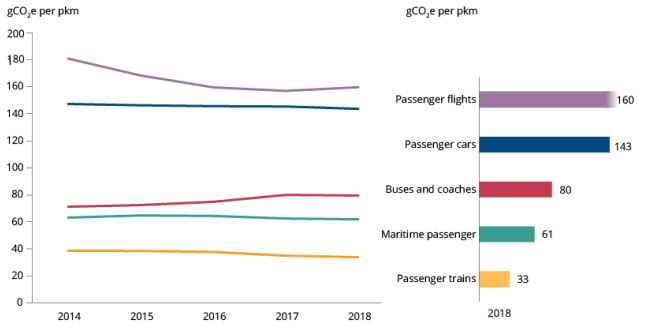
Source: Onlinebedrijfsmakelaar, Milieucentraal, ABN AMRO Group Economics

Don’t forget the more polluting commute to the office

Next up is employee commuting, where the savings in emissions tend to be much bigger. An old Eurostat study from 2017 highlighted that in the larger cities, where we would expect the bulk of offices to be present, roughly 60% of commuting is via public transport. A 2018 paper by the EEA shows that train travel emits 33 grams of CO2 per km, while travel by car emits 4.3 times more.

Car commute to the office 4.3 time more polluting

Figure 1: Average GHG emissions by motorised mode of passenger transport, EU-27, 2014-2018



Source: Fraunhoffer ISI, CE Delft, European Environment Agency (see here for paper)

These intensities allow us to calculate a weighted average for commuting to the office, and for simplicity we assume a 60/40 split in travel between train and car and that the commute is 40km daily both ways. Given that the train will continue to drive according to schedule despite workers staying at home, we increase the average intensity for trains by a factor of 1.67 to account for lower occupancy (this is quite conservative as it assumes all train passengers have office as their destination). Next to the 18kg saved per sqm from less total space needed, the 4000 km spent less on commuting reduces emissions by an additional 58kg per sqm per annum.

	5 days a week to office	3 days in office, 2 days working from home
a: Train avg emission per passenger (gr CO2 per km)	33	55
b: Passenger vehicle (gr CO2 per km)	143	143
c: Combined CO2 gr per km based on 60% train, 40% car	77	90
d: Km commuted based on 50 weeks worked and 40km per day	10000	6000
e: Avg emission per FTE from commuting (kg) = c*d	770	541
f: Avg emission per sqm office space - 1FTE occupies 4sqm	193	135

Source: EEA, NEN 1824, ABN AMRO Group Economics

It goes without saying that our calculations are hypothetical and for example assume perfect attendance planning for the employees staying at home and the ones coming to the office. Still, the savings provide food for thought. Besides the financial gains of lower rents, lower energy & lower employee transportation reimbursement bills, these environmental benefits must also sound attractive for tenants who are still in doubt about their future office floorspace requirements. Occupancy in the office space could therefore be under further pressure.

Energy, Tech and TelCo the most harmed sectors by the ECB's green tilt

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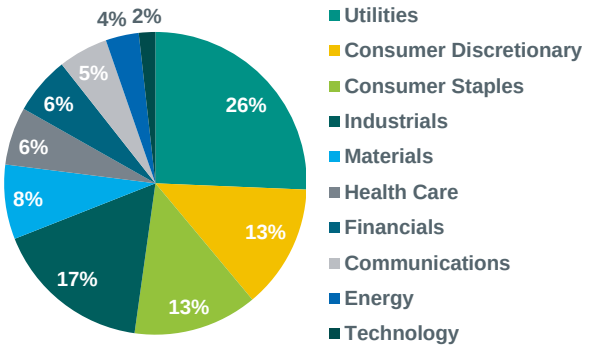
- **The ECB has been buying, since October 2022, securities for its CSPP portfolio using its 'green tilting' approach, in line with the methodology it set out earlier in the year**
- **In this piece, we investigate whether we can derive some 'hints' from which securities have been mostly impacted by it, both positively and negatively**
- **We show that utilities and consumer are sectors that have been benefiting from the 'green tilt', while this is the opposite for energy, technology and communications**
- **Moreover, the ECB also seems to have bought significantly more green bonds during this period**

The ECB announced last year that it would start to apply the "green tilt" to its Corporate Securities Purchase Programme (CSPP) portfolio through reinvestments as of the 1st of October 2022 (see here). While individual scores are not disclosed, it is possible to infer some of the "climate friendly" preferences of the ECB by looking at which securities were added during this period.

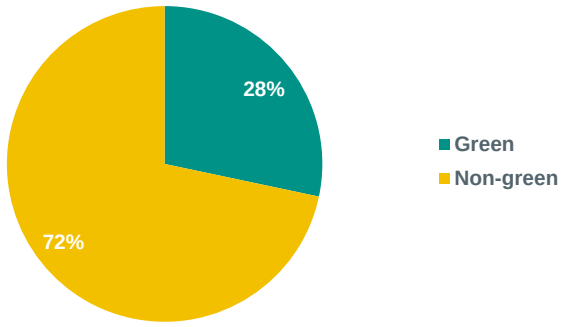
The charts below show in terms of sector (left) and label (right) what the share of new securities bought from 1st of October until today has been. Unfortunately, as we do not have access to the amounts bought, and given that the ECB no longer follows a "market approach", the analysis had to be done in terms of security ID's, instead of volumes. Still, the picture here seems to be clear: from all the securities bought during the last 7 months, the ECB had a clear preference for utilities (26% of the securities bought) and consumers staples/discretionary (26%). On the other hand, only 4% of the bonds acquired were from energy issuers and 2% from technology. With regards to energy, the purchases were actually limited to only one issuer: Neste Oyj. Although classified as energy, the Nordic company is the world's leading producer of sustainable aviation fuel, renewable diesel and renewable feedstock solutions. Hence, still implying an issuer within the energy sector that likely has a very good ESG score, according to the ECB methodology.

ECB has purchased a low number of energy bonds



Source: Bloomberg, ABN AMRO Group Economics. Note: in terms of number of securities.

There seems to be a preference for green bonds



Source: Bloomberg, ABN AMRO Group Economics. Note: in terms of number of securities.

Looking at the share of securities purchased that carry a green bond label, we see that these represent 28% of the purchases. While the number might at first sight not seem very high, we highlight that only 12% of the total EUR IG corporate market consists of green bonds, and that 14% of the ECB's portfolio (pre-green tilting) was made up of green bonds. Hence, there seems to have clearly been a preference from the ECB towards green bonds.

The table on the next page also shows which names were the most bought by the ECB during that period:

Most bought* issuers by the ECB since October 2022

Issuer	Share bought*	Avg maturity
EDF	4.4%	10.0
Schneider Electric	4.4%	6.6
Nestle	4.4%	7.7
Deutsche Bahn	3.5%	17.2
BASF	2.7%	8.8
EnBW	2.7%	7.3
Neste Oyj	2.7%	6.9
Heineken	2.7%	6.9
Kering	2.7%	5.5
Siemens	2.7%	13.6
Vodafone	2.7%	12.4
Engie	2.7%	12.7
VW	2.7%	4.8
TenneT	2.7%	13.3

*In terms of security IDs, not volumes

The table above also allows us to see that the ECB has been mostly adding new securities from good climate-performing companies at the long-end of the curve. That makes sense, as the ECB has also the ambition to gradually decarbonize its portfolio. Its methodology also includes excluding long-term bonds from companies with low ESG scores (unfortunately, the precise definition of long-term is not disclosed).

All in all, the analysis above allows us to conclude the following: utilities and consumer are clearly sectors in which the ECB will be overweight under its tilting approach, while energy, technology and communications are sectors where the central bank is underweight. From a label perspective, green bonds will (as expected) have better traction at the ECB.

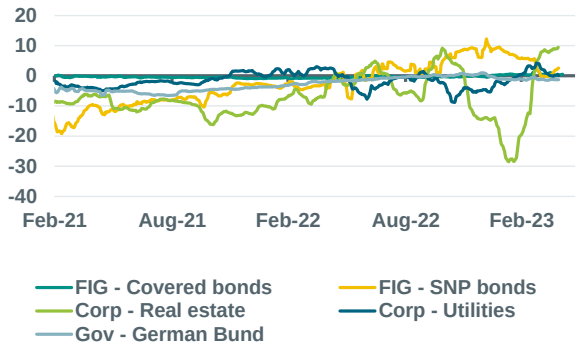
However, in the last ECB meeting, the Governing Council signalled that it expects to discontinue reinvestments under the APP as of July 2023. In this case, as Lagarde had put it: “the jury is out as to how we [ECB] can continue to deliver on our Paris agreement compliant investment and reinvestment programme without the reinvestment phase and how we address that”. That is because the volume of corporate bond purchases by the ECB will continue to be determined solely by monetary policy considerations. This could cap the limited greening of the CSPP portfolio we are seeing today.

Executive Board member Isabel Schnabel mentioned earlier this year during a speech (see **here**) that actively “reshuffling the portfolio towards greener issuers’”, which implies actively selling bonds of companies with weaker green credentials and substitute these with bonds of greener companies, could be an alternative in this situation. We recommend investors to keep a close eye on upcoming announcements, as the bonds from the sectors and maturity buckets as stated above, as well as labelled and non-labelled green bonds, will be heavily impacted if the ECB indeed decides to take a more active reshuffling approach.

ESG in figures

ABN AMRO Secondary Greenium Indicator

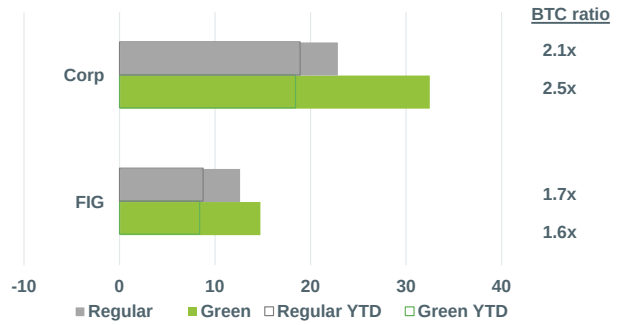
Delta (green I-spread – regular I-spread)



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

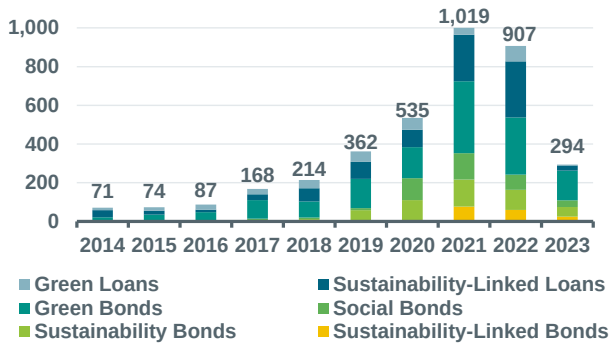
NIP in bps



Note: Data until 19-05-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

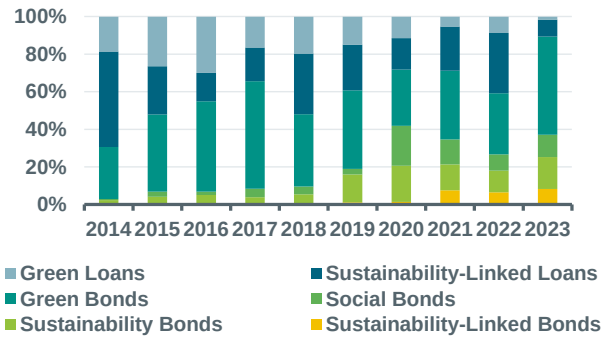
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

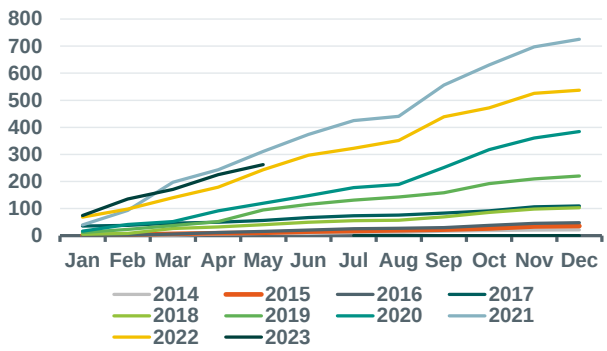
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

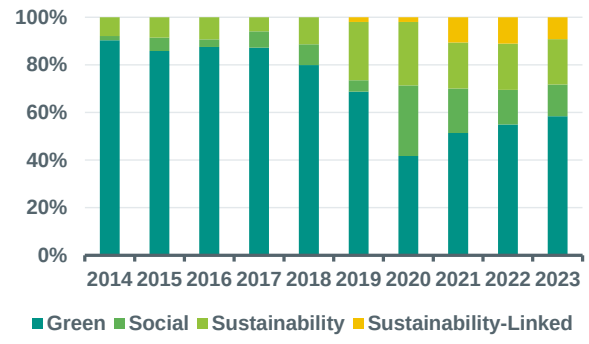
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

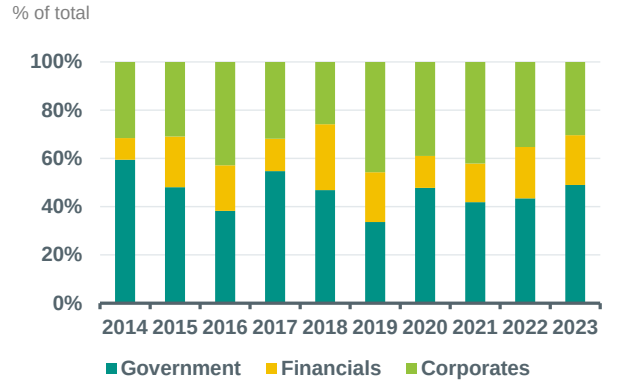
% of total



Source: Bloomberg, ABN AMRO Group Economics

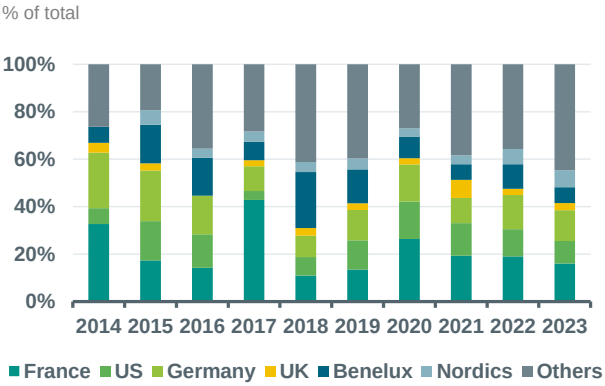
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Breakdown of ESG bond issuance by sector



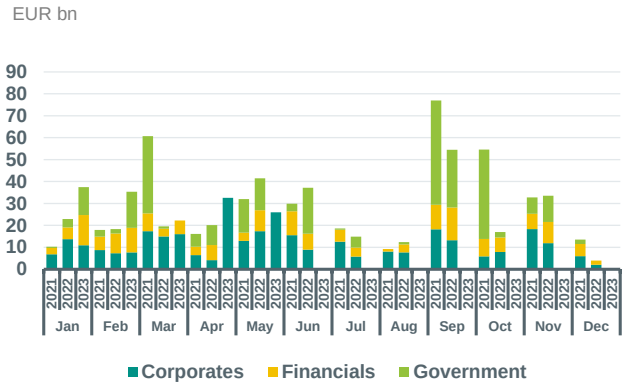
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country



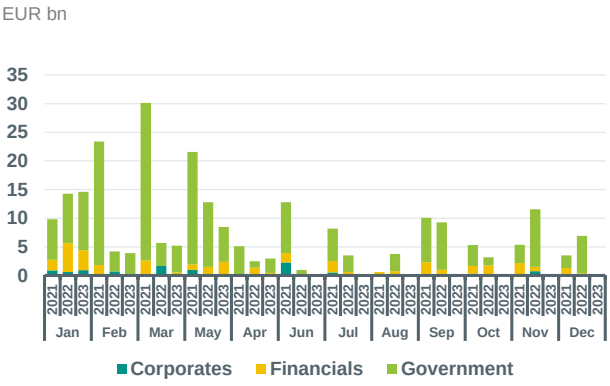
Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector



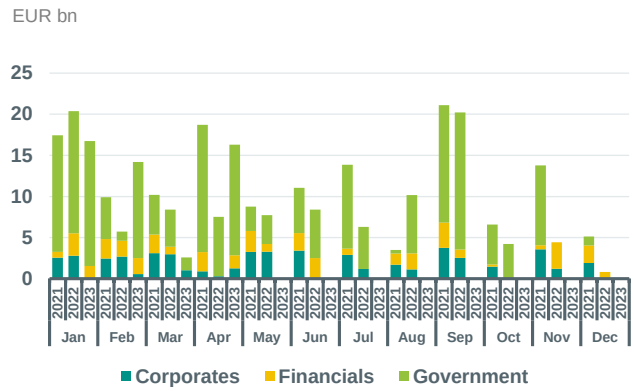
Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector



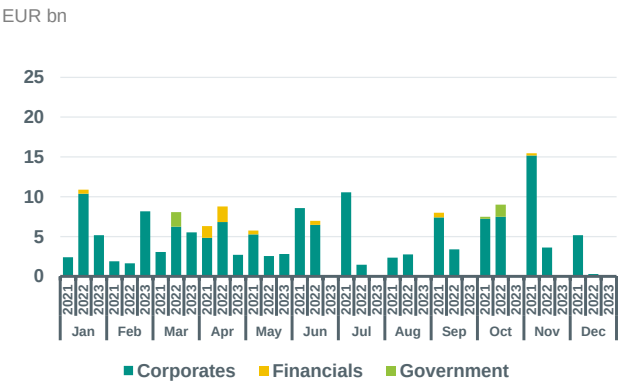
Source: Bloomberg, ABN AMRO Group Economics

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.

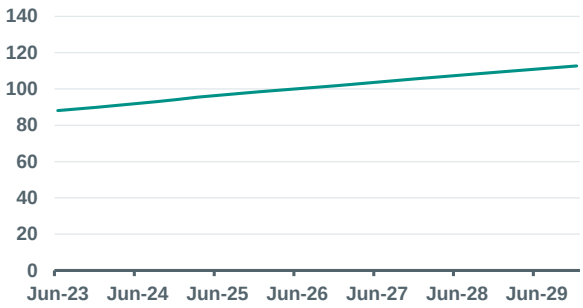
Carbon contract current prices (EU Allowance)

EUR/MT

Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)

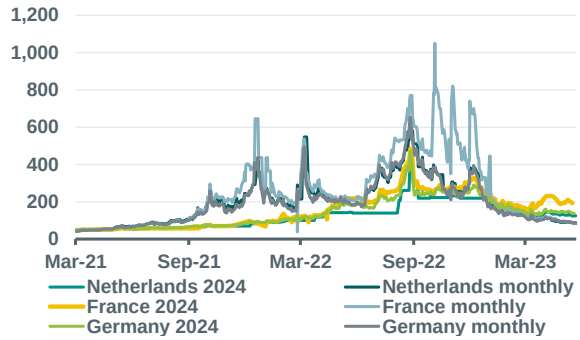
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

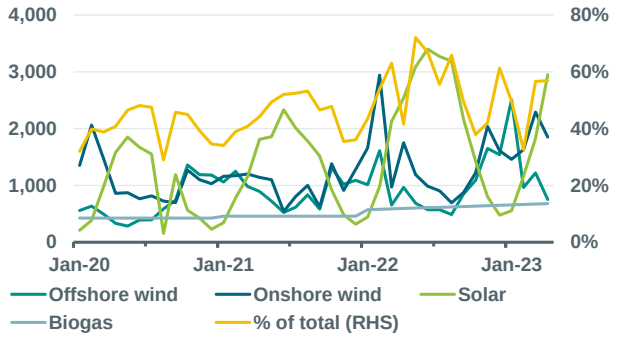
EUR/MWh



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

Electricity generation from renewable sources (NL)

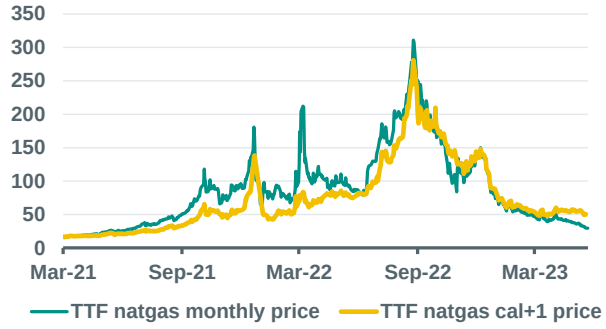
GW % of total



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

TTF Natgas prices

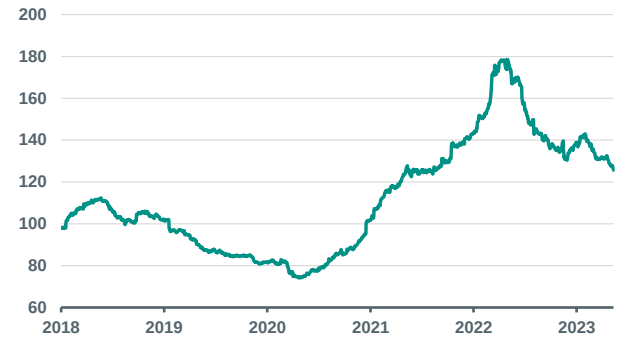
EUR/MWh



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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