

SustainaWeekly

The disappearing corporate greenium

- ▶ **Strategist:** We show that the corporate bond greenium has virtually disappeared, which could indicate a buying opportunity if investors think that corporate spreads are still due for further tightening. The greenium seems to be related with investor sentiment: the greenium increases when investors are in risk-off mode. A potential explanation for this could be due to green bonds' lower volatility, which means that green bond spreads could still be due for a catch-up should spreads rally even further (we do not believe will be the case, though).
- ▶ **Economist:** We focus on a number of relevant climate indicators in the EU. Of the top ten largest emitters in the EU, Italy performs best on all economic climate indicators, while the Czech Republic still has a lot of work to do. What further stands out is the relatively low share of renewable energy in the energy mix of the Netherlands and also Belgium. Even though energy efficiency is on the rise in almost all countries of the top ten largest emitters, some countries - such as Poland, Romania, the Czech Republic and Belgium - are lagging.
- ▶ **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 investigate how the greenium for corporate EUR IG bonds has evolved over the last few months. Our indicators suggest that the greenium has virtually disappeared. We look into the reasons for that. In our second note, we present a range of climate indicators, which we use to assess the climate leaders and laggards within the group of the large emitters in the EU.

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

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Where is the greenium for corporate bonds?

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- ▶ In this piece, we investigate how the greenium for corporate EUR IG bonds has evolved over the last months
- ▶ We show that the greenium has virtually disappeared, which could indicate a buying opportunity if investors think that corporate spreads are still due for further tightening
- ▶ We also show that the greenium seems to be related with investor sentiment: the greenium increases when investors are in risk-off mode
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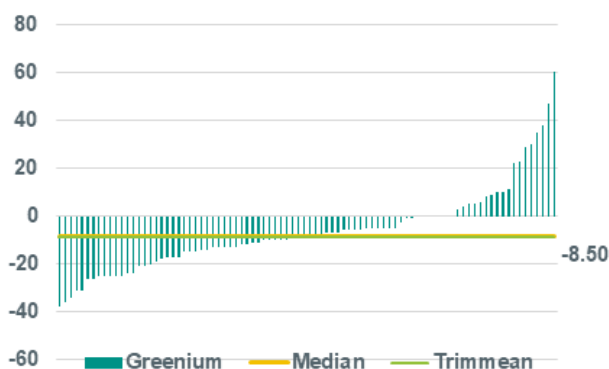
The greenium becomes less evident – a buying opportunity?

We have written extensively about the lower credit spread ESG bonds ought to achieve versus their non-ESG equivalents, which should be primarily driven by a larger pool of eligible investors. Indeed, we have on various occasions shown that the broad secondary market for EUR denominated corporate ESG bonds is characterized by the presence of a greenium (that is, ESG bond spreads trading tighter than their non-ESG bond equivalent), with the majority of observations in our sample trading at negative values.

However, this pattern has recently changed. The charts below show how much richer or cheaper (in bp) each ESG bond is trading on a sample size of 90 corporate bonds in November last year and today. Admittedly, the universe of green bonds is much larger, but to calculate a greenium one needs to have a same issuer & same duration¹ non-ESG bond as a benchmark and this therefore limits the size of the sample. Whilst previously we saw roughly 5 to 6bp of greenium across the sample (expressed as average or median), the difference between ESG debt and non-ESG debt has now virtually evaporated. Secondly, we drew comfort from the overall left hand skew in the distribution, yet the sample currently does not exhibit an discernible skew (see chart on the right side).

Secondary market greenium November 2022

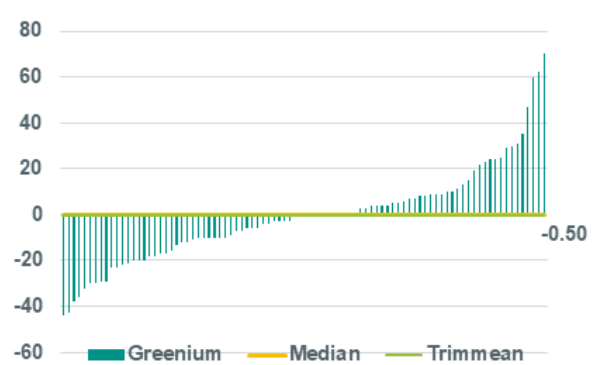
Greenium (bps)



Source: Bloomberg, ABN AMRO Group Economics. Note: greenium calculated as spreads on ESG bonds minus spreads on non-ESG bonds

Secondary market greenium currently

Greenium (bps)



Source: Bloomberg, ABN AMRO Group Economics. Note: greenium calculated as spreads on ESG bonds minus spreads on non-ESG bonds

The less discernible greenium today also seems to be market driven, as the outliers on the right, (a pick-up of 10bp or more being offered by the ESG bond), pertain to 9 issuers coming from a variety of sectors, including Schneider Electric (industrials), Volkswagen (automotive), Vonovia (real estate) and ENBW (utility). Actually the Schneider Electric green bond demonstrated a 25bp greenium in November, which has now strangely flipped into a 70bp pick-up, despite there not being

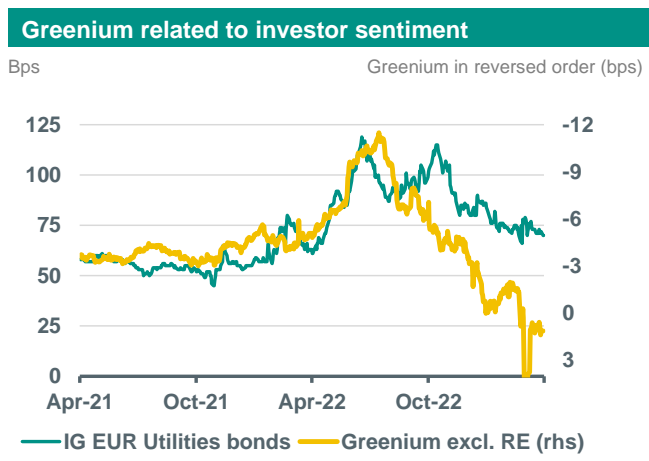
¹ When actual reference bond could not be found, we took the interpolated spread on that duration from the issuers non-ESG bond curve.

any concerning news on the ESG front at this company, while actually emission intensity has continued to crawl downwards. We had earlier shown that from an impact perspective, Vonovia's (including Deutsche Wohnen's) green bond funded assets achieved one of the largest reductions in emissions across the residential real estate green bond space. This does not justify the green bonds trading at a pick-up the regular bonds. Investors are best off-switching from the regular into the green instruments for these issuers where the green bond trades at a pick-up. Should the broad spread market continue to perform, the gap to the non-ESG equivalent cannot stay wide as it will solicit a hunt for yield. In case the market for spread turn sour, which is what we actually expect, the ESG bonds should have already been subject to a large part of widening which implies that ESG bond investors should be able to outperform the broad market.

The lower greenium could be driven by green bonds' lower volatility

While the analysis above looks at the entire ESG bond universe, we also focus exclusively on the green bonds to see whether the lack of greenium could have been caused by ESG non-green bonds in the sample. The graph below (left) shows in an index level, how the greenium has evolved over the last 2 years. Our sample takes into account green bonds included in the ICE BofAML Euro Senior Non-financial index (ticker: ENS0) that were issued before 1-1-2021 (this gives us an "apples-to-apples" type of comparison over the years). From the sample, we then try to find a non-ESG bond from the same issuer, but whose bond duration does not exceed the green bond's by more than 1.5 years. This leaves us with a sample of around 60 pair of bonds.

As shown in the chart below, the greeniums for corporates used to be relatively stable in 2021 at around -4bps, but it became increasingly volatile in 2022. One of the causes for the extreme volatility is real estate, where abnormal spread levels drove the green label of bonds to the backseat. We therefore exclude real estate bonds from our sample, to get a feeling on whether the greenium could have performed differently. This is shown on the chart below on the right hand side. However, even excluding real estate, we still see that the greenium has been very volatile in 2022. More than that, the greenium has been on a clear downward trend since the 3Q of last year.



Source: Bloomberg, ABN AMRO Group Economics. Note: greenium calculated as spreads on ESG bonds minus spreads on non-ESG bonds

Source: Bloomberg, ABN AMRO Group Economics. Note: greenium calculated as spreads on ESG bonds minus spreads on non-ESG bonds

We plot the greenium against corporate spreads from the from the ICE BofAML EUR IG corporates index and the ICE BofAML EUR IG utilities index (the latter for when excluding real estate green bonds – that is because once real estate is excluded from our sample, the vast majority of the pairs in our sample refer to utility bonds). The charts above allow us to see that there seems to be a relationship between investors risk sentiment and the greenium (in particular, when excluding real estate, due to the previously mentioned "abnormal" behaviour in 2022). That is, once investors become more risk averse (credit spreads widen), the greenium tends to increase, and vice-versa.

There are several potential explanations for this. One of them could be related to the fact that green bond spreads move less than their non-green counterparty. And indeed, as we have previously shown on an index level (see [here](#)), green bonds seem to show significantly lower volatility levels than non-green bonds. This is due to, for example, the "buy and hold"

approach (and more long-term view) of most dedicated ESG investors. Hence, if markets have rallied, it could be that green bond spreads are still due for a catch-up. However, as we previously noted, as we expect still a bumpy ride for EUR IG bond spreads ahead of us, green bonds could provide investors with a “nice place to hide”, given that these bonds have already been subject to a large part of the spread widening.

Another potential explanation for the relationship we see between greenium and investor sentiment is that green bonds are perceived as a more “safe haven” by investors. Also as indicated by their lower volatility, investors tend to prioritize the selling of non-green bonds when in risk-off mode. As we currently stand in a more “risk-on” environment (as also shown by credit spreads rallying), it could be that investors are also now reversing their green bond positions. We believe the first explanation could be more plausible, though.

Who are the EU's climate leaders and laggards?

Casper Burgering – Senior Economist Sustainability | casper.burgering@nl.abnamro.com

- ▶ **The gap between EU-27 and global CO2 intensity narrowed significantly in 30 years**
- ▶ **Of the top ten largest emitters in the EU, Italy performs best on many economic climate indicators, while the Czech Republic still lags behind**
- ▶ **Energy saving and reduction is the most effective way to achieve EU climate ambitions of 2030 and beyond**

Monitoring a wide range of climate indicators provides an opportunity to analyse the progress in decarbonisation more effectively. Moreover, it gives better insight into the challenges and opportunities in the transition to a greener economy. In this analysis, we provide insight into the trends of 12 (economically related) climate indicators of the ten largest CO2 emitters within the EU-27. This note shows which EU countries are ahead or behind the EU-27 average. Of the 12 indicators, achieving more energy efficiency is probably the most effective way to reach the higher-level targets of the EU climate plan. After all, energy efficiency is the best way to both combat energy waste and reduce CO2 emissions.

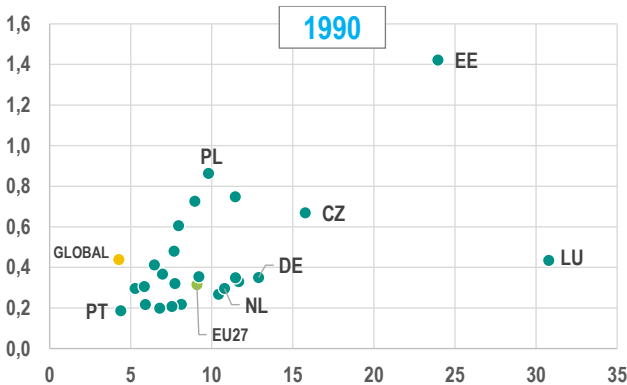
CO2 intensity in EU-27

An analysis on emissions intensity is considered less informative by some climate experts because such a measure still allows for an increase in absolute emissions. This is because emissions are related to, for example, output, value added or a country's population. However, the positive aspect of the measure is also that it provides reliable insights into the position of countries relative to each other and trends over the years.

From the figures below, we see, among other things, that global CO2 intensity is lower for the indicator CO2 emissions per capita, but higher for CO2 emissions by value added (CO2). Global CO2 emissions per capita actually increased by 13% over the period 1990-2021, while global CO2 emissions to GDP decreased by 36%. This is partly because global GDP growth has increased 6-7 times faster than population over the past 30 years. For the EU-27 average, the aforementioned two indicators fell by 31% and 55% respectively over the same period. Thus, the gap with global intensity has narrowed.

EU-27 CO2 intensity: per capita and GDP (1990)

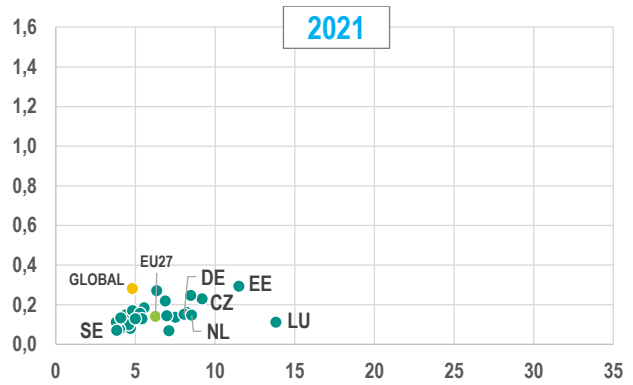
H.axis: tonne CO2 per capita; V.axis: CO2 per GDP (tonne CO2/1.000 USD)



Source: IEA-EDGAR CO2, ABN AMRO Group Economics

EU-27 CO2 intensity: per capita and GDP (2021)

H.axis: tonne CO2 per capita; V.axis: CO2 per GDP (tonne CO2/1.000 USD)



Source: IEA-EDGAR CO2, ABN AMRO Group Economics

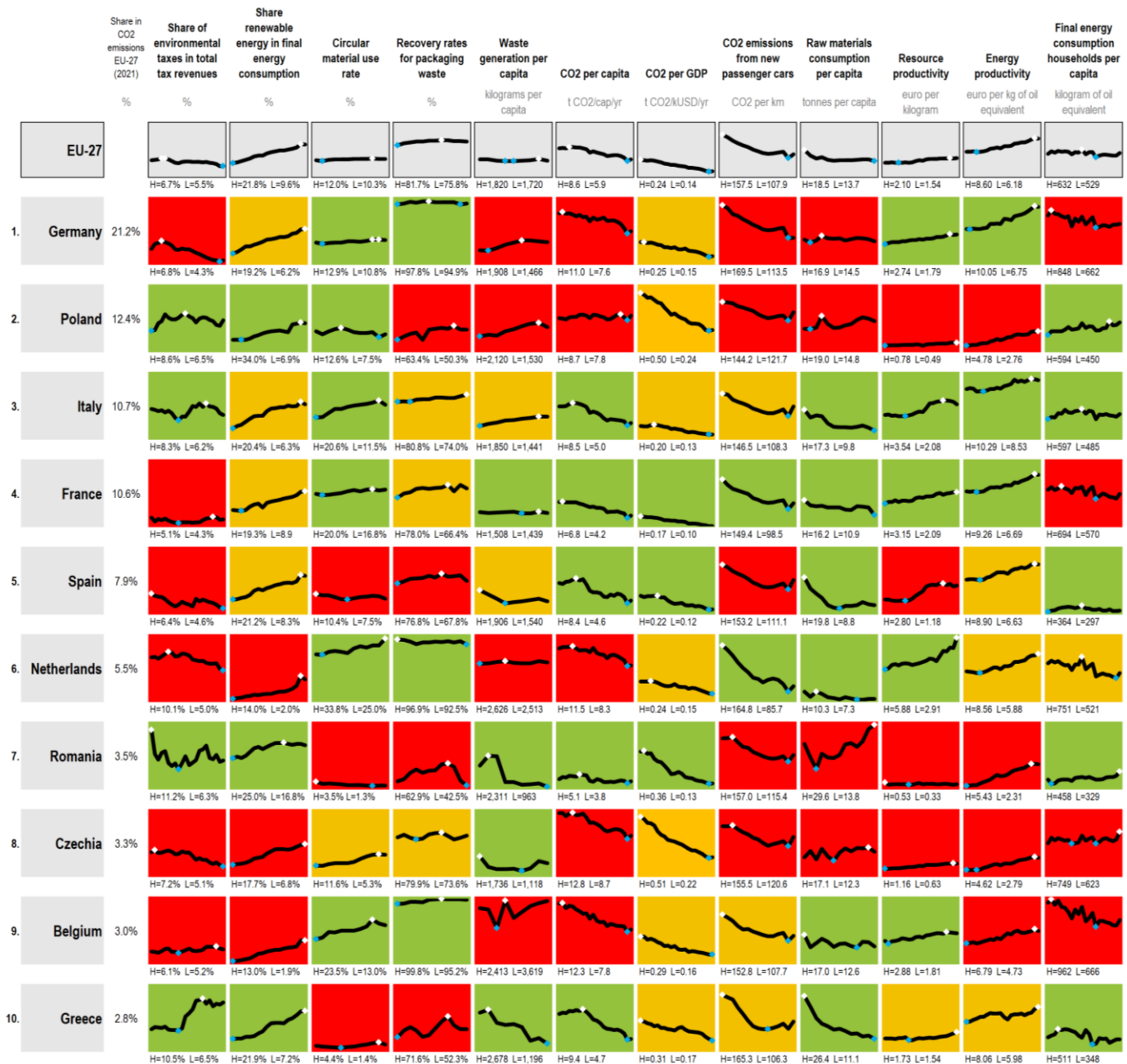
From the two figures it becomes clear that the cloud with points has become more concentrated in the lower-left corner towards 2021. This is a positive trend, as it shows that with more economic growth, for example, less CO2 emissions are involved. A few outliers stand out. For instance, Luxembourg and Estonia are the outliers in terms of CO2 intensity in both 1990 and 2021. However, both countries have seen substantial reductions in intensity. In 1990, Portugal was the outlier at the bottom, but fortunately several countries joined in 2021.

Despite being among the leaders in terms of the most number of solar panels per capita in 2021, the Netherlands still scores just above the EU-27 average when it comes to CO2 emissions per capita. Fortunately, compared to 1990, this is only a slight deterioration. However, the Netherlands is among the countries with the highest CO2 emissions by GDP in both 1990 and 2021. Again, the 2021 position is slightly worse compared to 1990.

EU-27 climate indicators

A climate indicator is a measure used to assess climate change in terms of trends and variability. Well-known indicators in this context are rising sea levels, ocean warming, extreme weather events and also the rise in average surface temperature. They help to better visualise climate risks globally. But valuable insights can also be gained from more economically oriented country-by-country indicators, which provide signals about future emissions and hence climate change. They allow a better understanding of the challenges and opportunities facing the transition to a greener economy. The table below shows the trends of some 12 climate indicators for the ten largest emitters of CO2 in the EU-27.

Climate indicators top 10 emitters CO2 within the EU-27



Source: IEA-EDGAR CO2, EUROSTAT, ABN AMRO Group Economics

Note: to increase comparability between countries, the vertical axis of each figure is identical in each column (i.e. per indicator); a red or green coloured figure indicates that the indicator is behind or respectively ahead of the EU average; the orange coloured figures indicate a neutral positioning; the blue dot in the figures indicates the lowest point in each case; the white dot in the figures indicates the highest point.

Out of 120 graphs, 46 are coloured red (38%), meaning the trend or position is more negative compared to the EU-27 average. A total of 48 graphs are coloured green (positive, 40%) and 26 orange (neutral, 22%). Of the top three largest emitters, Italy stands out the most. On none of the mentioned indicators is the graph in red and they are predominantly

green coloured graphs. And similarly, under the 'CO2 per GDP' indicator, no graph is in red. The ten largest emitters show positive to neutral trends in this indicator. The negative trends in this indicator can be found among the 17 other EU-27 countries.

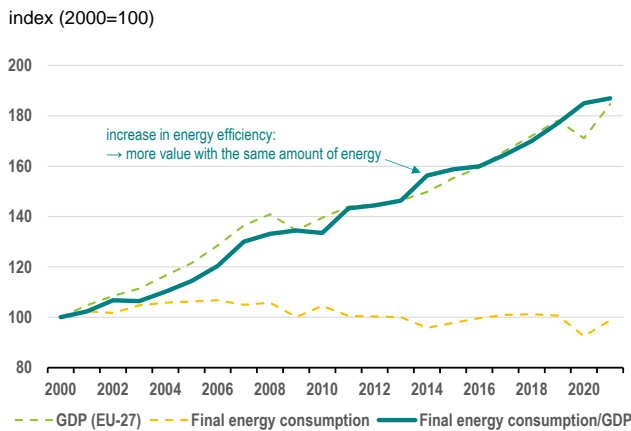
Among the top ten largest emitters, the Czech Republic performs relatively poorly on all indicators. Especially in energy efficiency, the country does not show good results. What further stands out is the relatively low share of renewable energy in the energy mix of the Netherlands and also Belgium. And that in itself is strange, as both countries are also in the top five countries with the most solar panels per capita. Despite energy productivity (or efficiency) showing an upward trend in almost all countries of the top ten largest emitters, the indicator's position is some countries - such as Poland, Romania, the Czech Republic and Belgium - are still well below the EU-27 average. Monitoring the trend in this indicator is most relevant.

Energy efficiency is among the top targets

Russia's invasion of Ukraine and the subsequent energy crisis made the tightening of the EU's existing energy efficiency directives much more urgent, together with the switch to more renewables. Wasting energy simply could no longer be allowed. Moreover, achieving greater energy efficiency is probably the most cost-effective way to achieve multiple goals simultaneously. Not only does it reduce emissions, but it also improves energy security, helps increase competitiveness and ultimately makes energy consumption more affordable for all end users. Greater energy efficiency is thus one of the most important factors in the EU's long-term energy and climate goals.

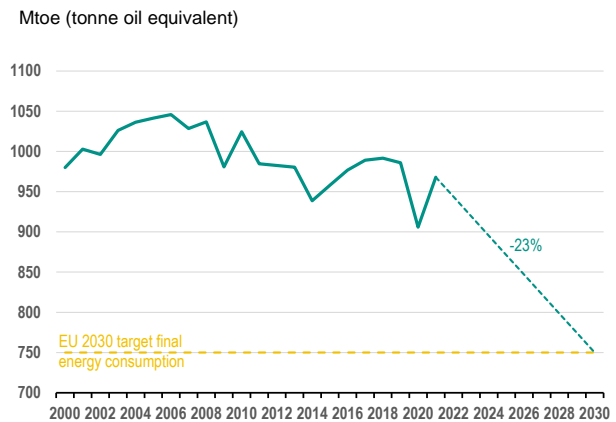
Energy efficiency means using less energy to perform the same activities. In very concrete terms, it means reducing energy waste. There are many opportunities for efficiency improvements in almost every sector of the economy. These could include the agricultural sector, buildings, transport, industry or power generation. In EU-27, energy efficiency (final energy consumption to GDP) has only improved over the past 20 years. Since the year 2000, energy efficiency has increased by 87%, driven by an almost stable trend in final energy consumption and an 85% increase in value added (GDP) in the EU-27.

Increase energy efficiency in EU-27



Source: EUROSTAT, ABN AMRO Group Economics

EU-27 trend and target in final energy consumption



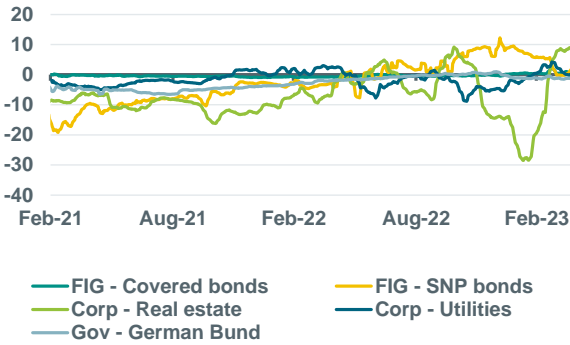
Source: EUROSTAT, ABN AMRO Group Economics

Looking forward, it remains important to reduce energy consumption in Europe. That is why the European Commission (EC) increased its energy efficiency ambition with the presentation of the *REPowerEU* plan (in May 2022). The main aim of the tightening was to make the EU less dependent on fossil fuel imports from Russia. As energy saving and reduction is the most effective way to achieve this ambition, the EC proposed to increase the binding EU energy efficiency target from 9% to 13% compared to the baseline for 2020. This amounts to 980 Mtoe for primary energy consumption and 750 Mtoe for final energy consumption in 2030, respectively. From the 2021 level of final energy consumption, this means a reduction of another 23% until 2030, or about 2.5% reduction in consumption per year. At first glance, this target seems achievable. Only the historical trend shows that over the past 20 years, final energy consumption has been relatively erratic and the annual average change has remained stable. It indicates that achieving this new target also adds another challenge to the overall EU climate plan.

ESG in figures

ABN AMRO Secondary Greenium Indicator

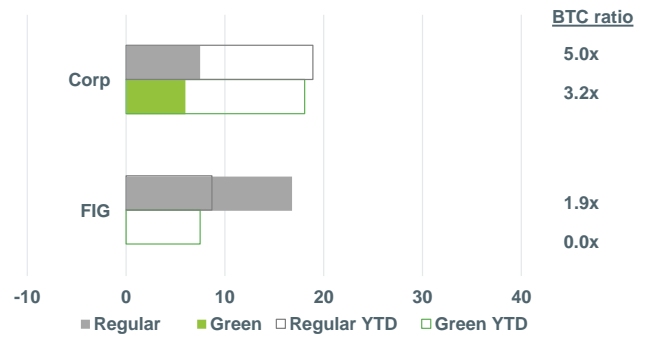
Delta (green I-spread – regular I-spread)



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

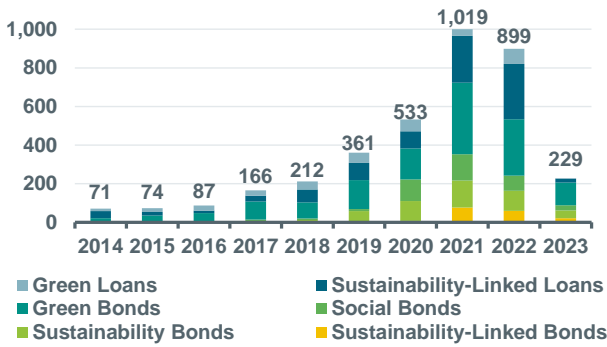
NIP in bps



Note: Data until 20-04-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

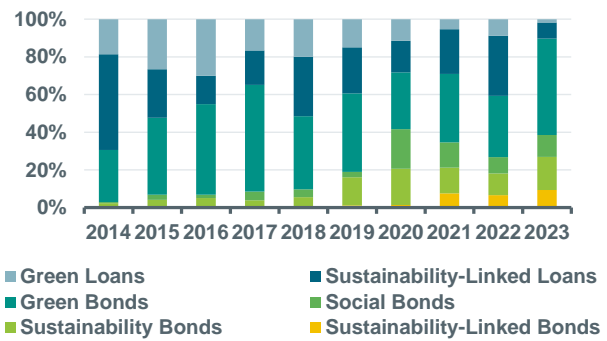
EUR bn



Source: Bloomberg, ABN AMRO Group Economics. Note: data as of 14/04.

Breakdown of sustainable debt by type

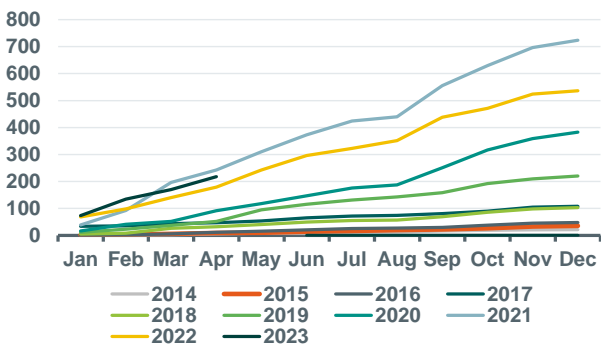
% of total



Source: Bloomberg, ABN AMRO Group Economics. Note: data as of 14/04.

YTD ESG bond issuance

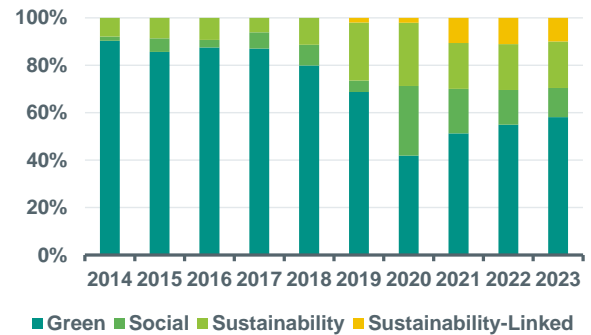
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

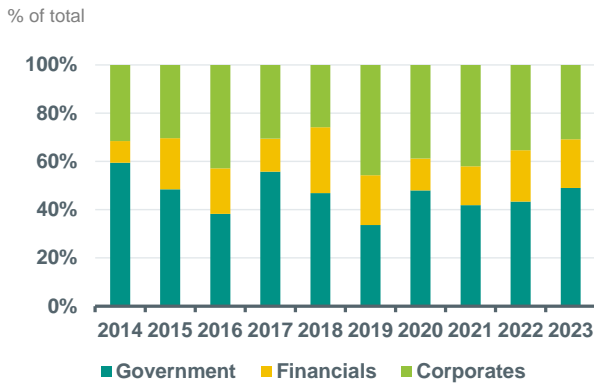
% of total



Source: Bloomberg, ABN AMRO Group Economics

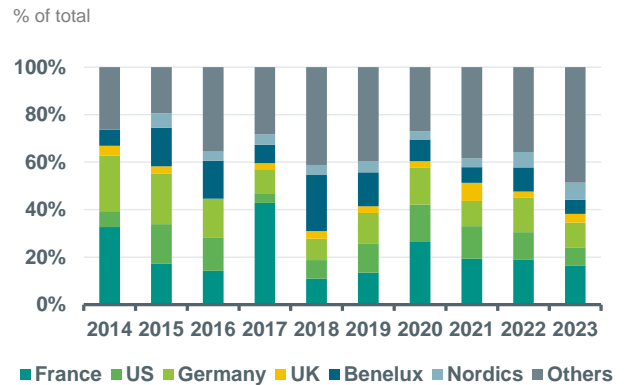
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Breakdown of ESG bond issuance by sector



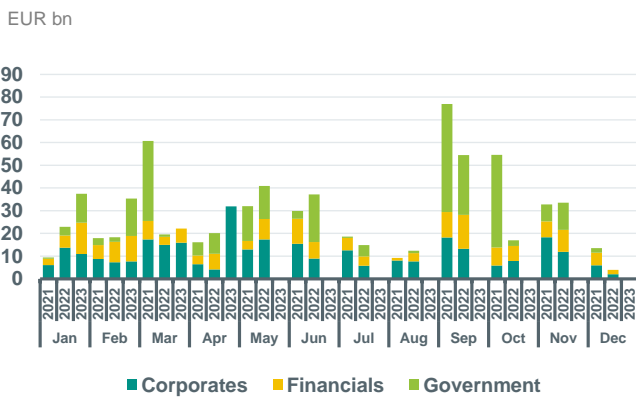
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country



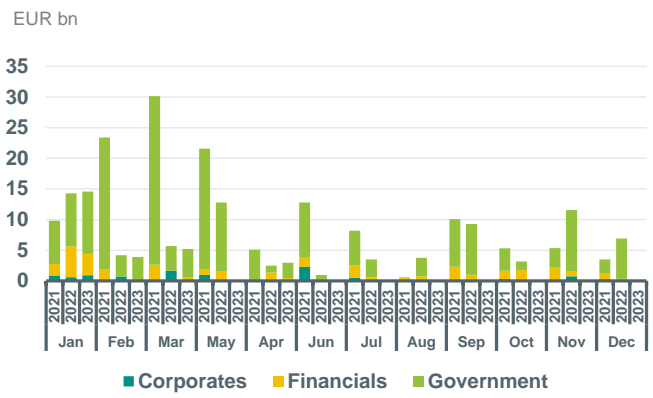
Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector



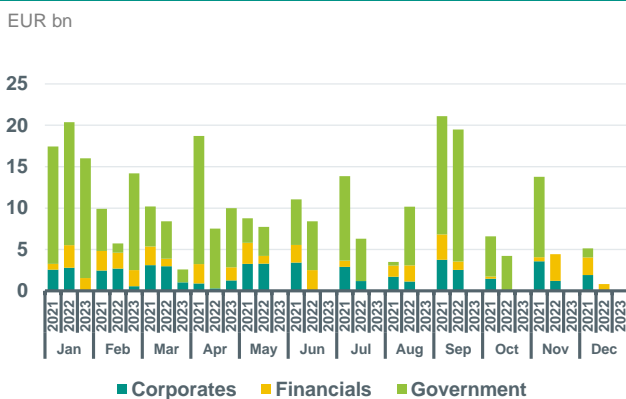
Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector



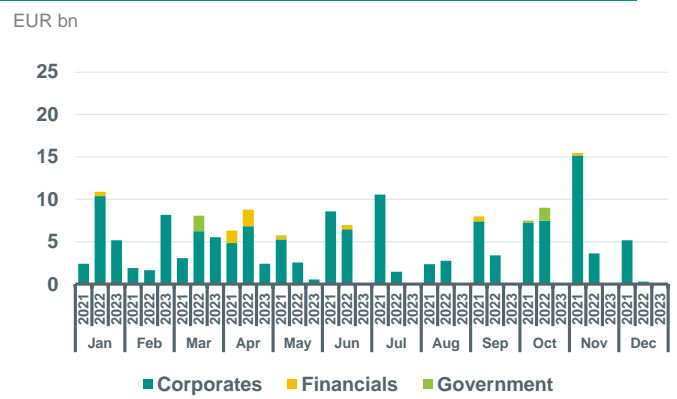
Source: Bloomberg, ABN AMRO Group Economics

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

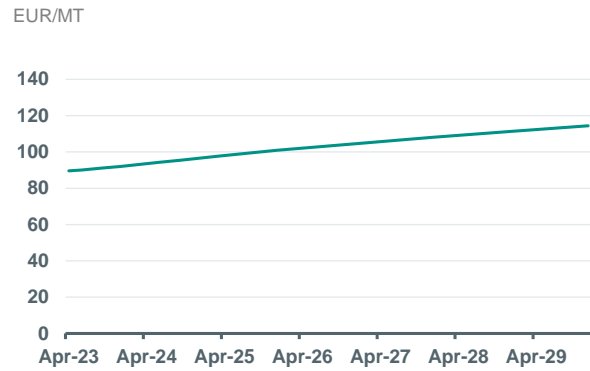
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Carbon contract current prices (EU Allowance)



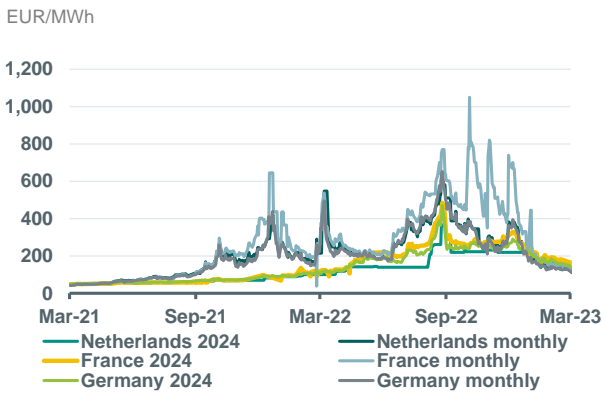
Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)



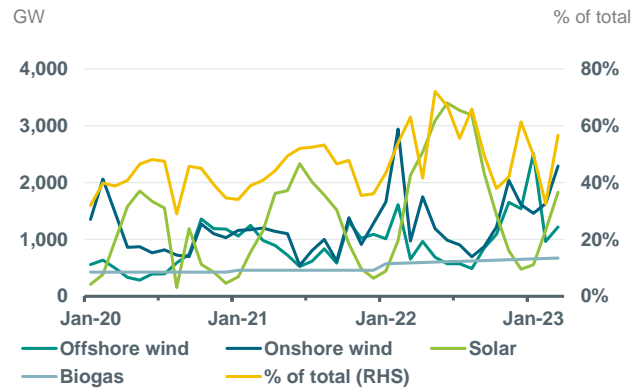
Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)



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

Electricity generation from renewable sources (NL)



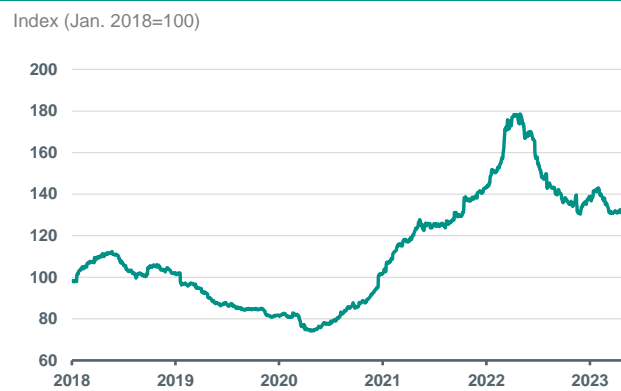
Source: Energieopwek (Klimaat-akkoord), ABN AMRO Group Economics

TTF Natgas prices



Source: Bloomberg, ABN AMRO Group Economics

Transition Commodities Price Index



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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