# SustainaWeekly

## Investment needs for the Dutch energy transition

- **Economics Theme: A successful transition to Net Zero would need investment to more than double compared to previous decade. Our research indicates that additional annual investment needs may be in the order of magnitude of around EUR15bn per annum (1.5% GDP). Investment needs also remain elevated for an extended period.**

- **Strategy Theme: Green bond indices have, since the outbreak of the Russia-Ukraine war, underperformed non-green bond counterparts. We attribute this to their overweight in underperforming sectors such as Financials and Real Estate. However, green bond indices have a significantly lower volatility and higher risk-adjusted returns.**

- **ESG Bonds: Volkswagen issued a dual-tranche green bond at lower concessions than all other corporate deals last week. The car manufacturer's greenium in the secondary market is not as consistent as that of its competitor Mercedes Benz. However, VW's better carbon reduction proposition should justifies a higher greenium in our view.**

- **Company & Sector news: Dutch industry is a large consumer of natural gas with a 40% share in total supply for business use. Within industry, the chemical industry accounts for more than half. Smarter heat use, electrification and maximising the circular use of raw materials is a good step towards greater energy efficiency.**

- **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 week's SustainaWeekly, we start by presenting our estimates of the investment needs of Dutch energy transition required in a net zero scenario. Although similar exercises have been done on a global and European level, there are, to our knowledge, no comprehensive estimates for the Netherlands. We find that investment would need to more than double compared to previous decade. We go on to analyse the performance of green bond indices, as well as last week's ESG bond issuance. Finally, we assess Dutch industry's gas usage and scope to further improve its energy efficiency. Enjoy the read and, as always, let us know if you have any feedback!

Nick Kounis, Head Financial Markets and Sustainability Research | nick.kounis@nl.abnamro.com

# How much investment is required for the Dutch energy transition?

Anke Martens – Senior Macro Economist Sustainability anke.martens@nl.abnamro.com

- **Speed of GHG reduction in the Netherlands needs to pick up, and this requires (among others) increased investment**
- **Investment in both energy supply and demand should more than double compared to previous decade**
- **Investment needs remain elevated for an extended period**

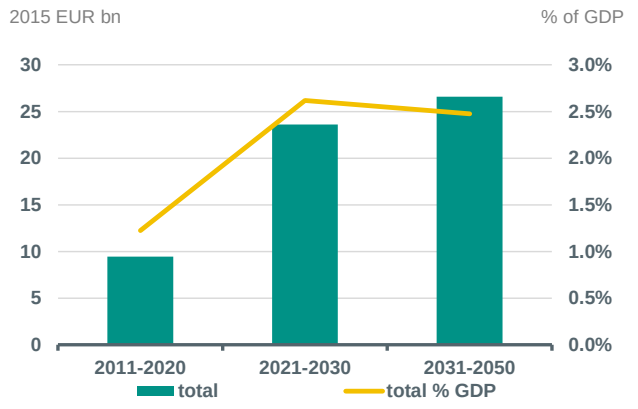
**Speed of GHG reduction in the Netherlands needs to pick up, and this requires (among others) increased investment**

As you may have read in last week's Sustainaweekly (see here), Dutch emissions of greenhouse gases (GHGs) decreased 11% yoy in the first quarter of the year. This was mainly the result of reduced gas consumption in response to the sharp price increase. But more generally, there has also been a longer term downward trend in Dutch GHG emissions that has picked up a bit since 2010. While this decrease is positive, the speed of GHG reductions seen so far is insufficient to reach the reduction goals of 2030 and 2050. The Netherlands has the objective to reduce greenhouse gas emissions by 60% (or at least 55%) by 2030, compared to 1990, on its way to reach the climate neutrality (net zero) end goal in 2050. To increase the speed of GHG reduction, an increasing proportion of GHG emissions needs to be priced, via carbon prices in a emissions trading system such as the EU ETS, or via taxation. In that way, the harmful effects of emitting greenhouse gases are increasingly taken into account in decision making by producers and consumers of energy. In addition to carbon pricing, a significant increase in investment in new technologies and infrastructure is needed to achieve climate neutrality: more efficient and better insulated buildings, a shift to electric cars, and continued rapid penetration of renewable energy in all sectors. In this note we review estimates of investment needs on the level of the Netherlands and where the money might come from.

**Investments in both energy supply and energy demand need to more than double compared to the past decade**

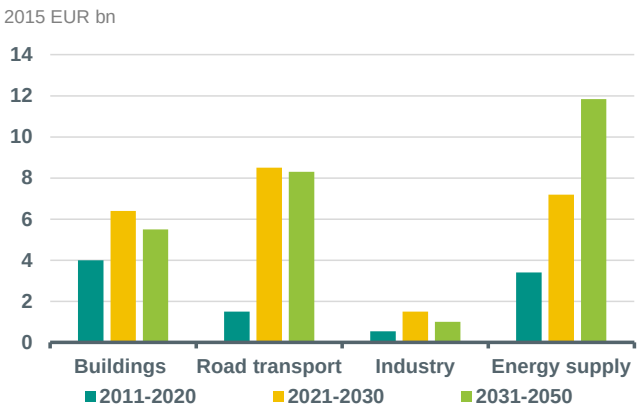
Just how large is the *additional* investment need for the Netherlands? Our research indicates that it may be in the order of magnitude of around EUR15bn per annum, or a more than doubling of investments that took place in the previous decade. This additional amount equates to around 1.5% of GDP on an annual basis.

**Investment (needs)* The Netherlands**




*Total for energy supply, road transport, industry, buildings
Source: CBS, DNB, European Commission, ABN AMRO Group Economics

**Investment (needs) power supply and demand**




Source: CBS, DNB, European Commission, ABN AMRO Group Economics

Investment in energy supply needs to increase more than EUR 3bn yearly adding up to a total annual investment need of roughly EUR 7-12bn. Of this total, EUR 4bn needs to take place in network infrastructure. An additional large part is investment needs in power plants. Investments in new fuels production starts to increasingly be a significant factor after 2030.

Investment in buildings in a net zero scenario needs to increase by roughly EUR 2bn annually, or an increase of about 50% compared to the average of the previous decade. Most of the investment is in the transition of residential heating. In the industrial sector, investments need to more than double and increase by about 0.5-1 billion euros annually. For the mobility sector, only the *additional* cost for road transport is taken into account in these numbers. This comes down to the additional cost in passenger vehicle, van and truck replacement (the higher price for an electric variation of the vehicle) and costs of additional charging points. Our rough estimates point to an approximate EUR 7bn in additional financing needs yearly.

**Investment in transition of energy supply & demand to reach net zero in 2050 for the Netherlands**

| | 2011-2020 ann. av. | 2021-2030 ann. av. | 2031-2050 ann. av. | 2021-2030 cum. | 2031-2050 cum. |
|---|---|---|---|---|---|
| Buildings (1) | 4.0 | 6.4 | 5.5 | 64 | 110 |
| Road transport (2) | 1.5 | 8.5 | 8.3 | 85 | 166 |
| Industry | 0.5 | 1.5 | 1.0 | 15 | 20 |
| Energy supply | 3.4 | 7.2 | 11.8 | 72 | 237 |
| **total** | **9.4** | **23.6** | **26.6** | **236** | **533** |
| **total % GDP** | **1.2%** | **2.6%** | **2.5%** | | |

EUR 2015 bn. (1) includes residential and non-residential; (2) additional purchase cost of electric for passenger cars, (light) trucks, and charging point construction. Sources: CBS, DNB, EC, ABN AMRO GE calculations

**Investment needs remain large for an extended period**

In addition to the elevated investment needs per year, the analysis also shows that the additional investment effort needs to be kept up until 2050 to reach net zero in that year. Who will need to come up with these funds? A sizeable part of it will come from the public sector. The government that came in at the end of 2021 substantially increased its ambitions and the budgets allocated to the energy transition. In the Rijksbegroting 2022, announced in September 2021, EUR 6.8bn was added for the period 2022-2026 and an even more significant increase was announced in the Coalition Accord, presented in December 2021, when EUR 35bn[1] was added for the period 2023 to 2030. Combining with the existing obligations, this brings the total to roughly EUR 10bn[2] annually in the coming years.

In addition to the approximately EUR 10bn from the central government, an annual approximately EUR 4bn is expected to be invested by grid operators/utility companies. This leaves more than EUR 10bn annually to be financed by the private sector, households, and other forms of government including EU funds. The energy transition requires significantly increased investment from all parties involved. In our view, this will require investment from the public sector to be relatively frontloaded during the transition. Keeping the balance throughout the horizon will be one of the crucial ingredients for the transition to net zero.

[1] The Voorjaarsnota in May of this year reallocated €2.2bn of the total funds away from climate to other purposes, such as compensation for the sharply higher energy prices and additional defence spending given the war in Ukraine. As in practice, a lot of funds had not yet been allocated to concrete projects, and also given other bottlenecks, such as the labour shortage, the reallocation of the €2.2bn may not make a big difference in the implementation of climate measures in the coming years.

[2] This total is for central government and excludes other forms of government such as municipalities, and EU funds.

# Green Bond indices underperform, but still hold lower risk relative to non-green bond indices

Larissa de Barros Fritz – ESG & Corporates Strategist | larissa.de.barros.fritz@nl.abnamro.com

- **Green bond indices have, since the outbreak of the Russia-Ukraine war, underperformed relative to similar broad market non-green bond indices**
- **We attribute this to their overweight in underperforming sectors such as Financials and Real Estate**
- **This is mostly due to the fact that these sectors also hold a representative high share in the total green bond market**
- **Nevertheless, we see that green bond indices have a significantly lower volatility than non-green bond indices**
- **Under a risk-adjusted return approach, green bond indices also tend to outperform non-green bond indices**

The rapid growth of the green bond market has also spurred investors into looking at these instruments as a separate part of the bond market. This has consequently resulted in the creation of green bond indices, which track the performance of green bonds and therefore make the comparison with the broader market easier. With this in mind, we have taken a closer look at how green bond indices have recently performed. For that, we have chosen the most well-known green bond indices, from the following providers: the Bloomberg Barclays MSCI, the ICE BofA and the S&P. The key differences and similarities amongst their green bond indices are depicted in the table below.

| Name | S&P Green Bond Index | S&P Green Bond Select Index | Bloomberg Barclays MSCI Global Green Bond Index | ICE BofA Green Bond Index |
|---|---|---|---|---|
| **Ticker** | SPUSGRN Index | SPGRSLLT Index | I31572 Index | GREN Index |
| **Sector** | All | All | All | All |
| **Country** | All | All | All | All |
| **Currency** | All | G10 currencies. Bonds issued in non-G10 currencies must be issued in global markets | Americas: CAD, CLP, MXN, USD<br>EMEA: CHF, CZK, DKK, EUR, GBP, HUF, ILS, NOK, PLN, RUB, SEK, ZAR<br>Asia-Pacific: AUD, HKD, JPY, KRW, MYR, NZD, SGD, THB | Developed markets: AUD, CAD, EUR, GBP, JPY, SEK, USD<br>Emerging markets: BRL, CLP, CNH, CNY, COP, CZK, EGP, HKD, HUF, IDR, ILS, INR, KRW, MAD, MXN, MYR, NGN, PEN, PHP, PLN, RUB, SGD, THB, TRY, TWD, |
| **Amount Outstanding** | No restriction | Depends on the currency - in USD it is 750m for sovereigns and 250m for all other issuers | Depends on the currency - in USD it is 300m | Depends on the currency - in USD it is 250m |
| **Credit Quality** | All | All, but must be rated | IG | IG |
| **Coupon** | - Fixed<br>- Zero coupon<br>- Step-up<br>- Floaters<br>- Fixed-to-float | All but floating | - Fixed<br>- Callable fixed-to-float<br>- Bonds with a step-up coupon | All, but floating |
| **Maturity** | > 1 month | > 1 month | All (holds bond until maturity) | > 1 month |
| **Securities type** | All excluding:<br>- Bills<br>- STRIPS<br>- Inflation-Linked<br>- Convertible bonds | All excluding:<br>- Sukuk<br>- Convertible<br>- Floating<br>- Private Placements<br>- Perpetual Securities<br>- Tax Exempt Municipal Bonds | All excluding:<br>- Contingent capital securities<br>- Bonds with equity type features<br>- Inflation-linked<br>- Fixed-rate perpetuals<br>- Tax-exempt municipal bonds<br>- Private Placements<br>- Sinkable Russian OFZ<br>-USD25/50 par bonds<br>- Structured notes<br>- Non-ERISA eligible CMBS<br>- US agency MBS hybrid ARMs<br>- Formosa bonds<br>- Illiquid securities | All excluding:<br>- Callable perpetual securities qualify that do not have a min. 1 year from the first call date<br>- Fixed-to-floating rate securities that are not callable within the fixed rate period and are at least 1 month from the last call prior to the date the bond transitions from a fixed to a floating rate security<br>- Contingent capital securities<br>- Capital securities where conversion cannot be mandated by a regulatory authority<br>- Tax-exempt securities as well as inflation-linked, equity-linked and legally defaulted |
| **ESG criteria** | - Climate Bonds Initative certification | - Climate Bonds Initative certification | - MSCI ESG Research is responsible for doing their own assessment, even for self-labelled bonds<br>- This includes: At least 90% of the bond proceeds need to belong to one of these categories: alternative (renewable) energy, energy efficiency, pollution prevention and control, sustainable water, green building, climate adaptations<br>- A formal process to ring-fence net proceeds to the eligible use of proceeds must be disclosed in the bond documentation<br>- An impact/allocation report must be published within 18 months from issuance | Qualifying bonds must have a clearly designated use of proceeds that is solely applied toward projects or activities that promote climate change mitigation or adaptation or other environmental sustainability purposes as outlined by the ICMA Green Bond Principles |

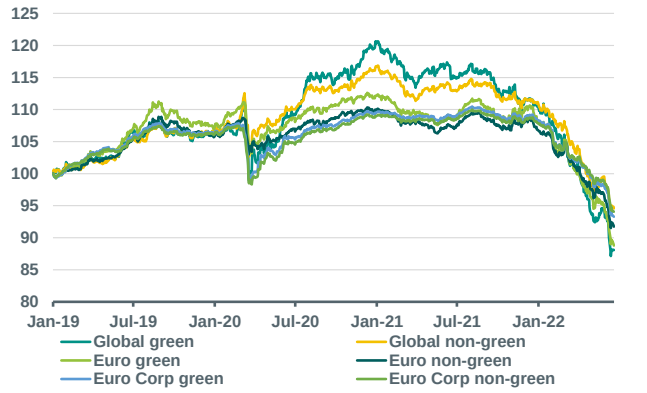
Most notably, we would like to highlight the difference in ESG criteria from the table above. Clearly, ICE BofA has the "loosest" criteria. In this case, as long as a bond has specified it will use the bond proceeds for green projects that comply with the ICMA Green Bond Principles, the bond is eligible for inclusion in the index. No further assessment is required (not even by a Second Party Opinion provider). Both the S&P and the Bloomberg MSCI go a bit further in terms of strictness, though. S&P requires issuers to have also documentation that proves it aligns with the Climate Bonds Initiative (CBI) criteria. MSCI has designated a dedicated team which evaluates all securities that are claimed as being green bonds in order to assess whether they comply with its own (strict) criteria. We do acknowledge though that this results in some limitations, as to, for example, bonds taking a long time to be evaluated before they can be included in the index. A limitation also for the S&P criteria is that CBI does not have a established framework for all use of proceeds (for example, criteria for steel, fishery and basic chemicals are still under development).

**The (relative) performance of green bond indices**

As a next step, we have taken a look at the performance of these indices since early 2019, when they have become more mainstream. More than that – we have also compared it with their corresponding non-green (or broader market) index. This gives us an idea of whether these indices under (or over) performed the broader market. For the ICE BofA and the Bloomberg Barclays indices versions, we have also taken a look at how the corresponding Euro and Euro Corporates green bond indices perform. S&P is not depicted in the charts below as we admittedly did not find a good corresponding non-green index for an accurate comparison. All indices were rebalanced to 100 for a better assessment. The charts at the right hand side show the difference between these peer indices.

**Bloomberg Barclays MSCI Indices performance…**

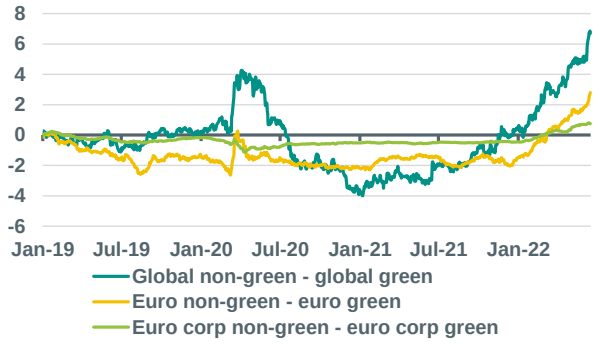
Index* (January 2019=100)




Source: Bloomberg, ICE BofAML, ABN AMRO Group Economics. *Note: index prices were rebalanced to 100 (January 2019)

**…and relative performance**

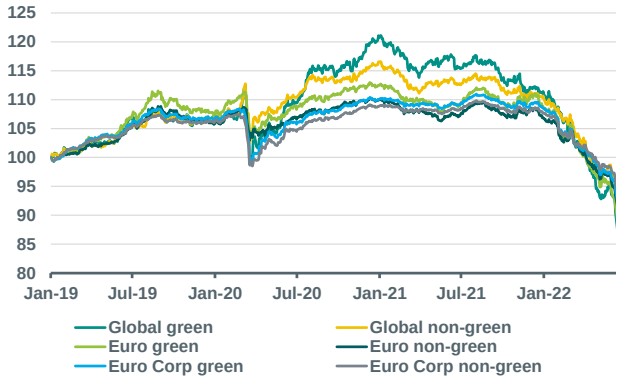
Difference in index (price) between non-green and green indices (Jan 2019 = 100)




Source: Bloomberg, ICE BofAML, ABN AMRO Group Economics

**ICE BofA Indices performance…**

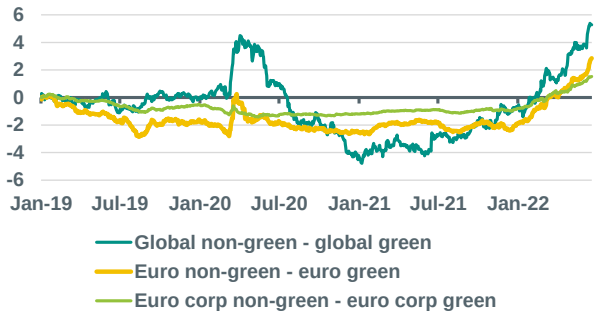
Index* (January 2019=100)




Source: Bloomberg, ICE BofAML, ABN AMRO Group Economics. *Note: index prices were rebalanced to 100 (January 2019)

**…and relative performance**

Difference in index (price) between non-green and green indices (Jan 2019 = 100)

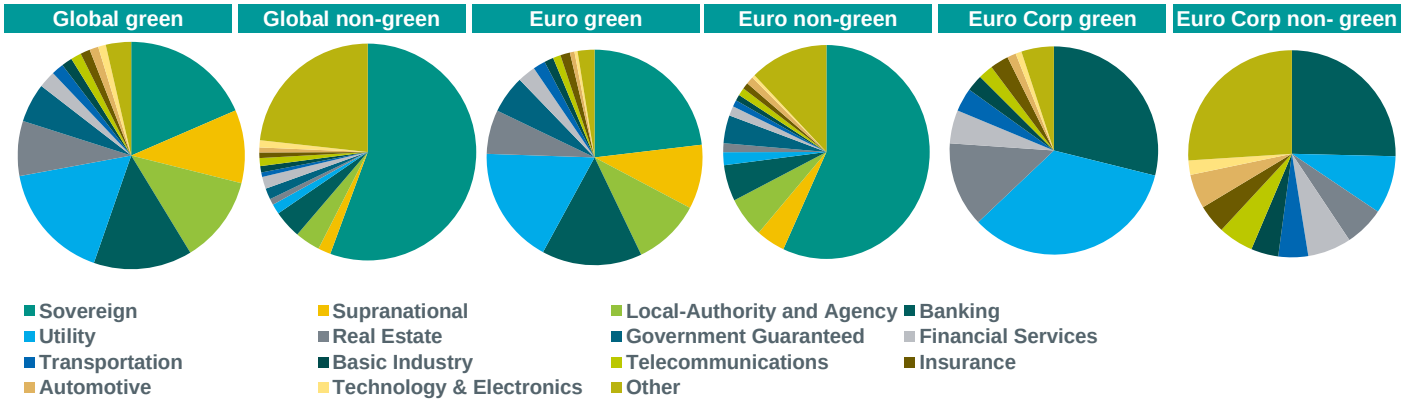



Source: Bloomberg, ICE BofAML, ABN AMRO Group Economics

Looking at the charts above, the first conclusion we can draw is that, for the very first time within our tracking period, euro green bond indices are underperforming against their (non-green) peers. Also during the pandemic, when the global green bond index underperformed their non-green one comparable, the euro green bond indices actually showed resilience. Most notably, we can see that the underperformance of these indices started in March 2022, when the Russia-Ukraine war broke out.

To better understand what is driving this most notable underperformance, we have taken a look at the composition of these indices. As access is restricted to the Bloomberg Barclays MSCI index, we have used the ICE BofA as proxy – assuming therefore, that composition amongst sector must be fairly similar given also the similar criteria, as we have shown in the table on page 4. The chart below summarizes the composition of these indices.

**Green bond indices seem to be overweight on underperforming sectors such as banking and real estate**




Source: Bloomberg, ABN AMRO Group Economics. Note: composition is given by the % of weight in total index

A first look at the composition of the indices indicates that green bond indices tend to have higher weights for sectors such as banking and real estate – which are, since the outbreak of the war, underperforming. This is fairly understandable, given that there are significantly more green bond coming from these sectors, which leaves those indices more exposed to economic headwinds. Looking at the total outstanding green bonds in the market, issuances from financial institutions represent 21% of the total market. These are only lagging behind government/SSA issuers, which represent around 40% of the market. Financials are then followed by utilities (18%) and real estate (8%). The trend in sector breakdown in the green bond market is therefore, obviously, mimicked by the green bond indices.

Hence, one can blame the recent underperformance of green bond indices (vs the non-green bond market indices) on their overweight in financials and real estate companies. With regards to financials, there has been a downward revision of profitability since the outbreak of the war, attributed to higher impairment costs, coupled with lower net fee and commission income. Higher interest rates are expected to only benefit banks from 2023. However, even then, banks that are heavily invested in loans with longer interest rate fixation periods might be adversely affected by the gradually rising rates. Additionally, the rise in rates will also mean the funding costs for banks will rise further. On top of that, in recent weeks, sentiment has shifted towards higher expectations of recession, which would add to the sharp deterioration of their loan book – another headwind to financial institutions. In terms of real estate, the sector is specifically sensitive to interest rates increases. That is, a rise in rates affects not only valuations but also puts pressure on refinancing risks, although we do note that real interest rates remain negative and there is not much pressure on rents and vacancies yet.

The recent underperformance of green bond indices due to their overweight in these underperforming sectors also highlights how the green bond market lacks diversification (not only under use of proceeds classes, but also, as we see, in terms of sectors). A green bond fund has therefore nowadays little flexibility in terms of adjusting their exposures towards better performing sectors, which is in particular a disadvantage when markets are in difficult conditions. This challenge will likely remain, as eligible projects in other sectors remain scant. To add to it, the issuance of green bonds by transition companies,

who do not have enough green assets but the ambition to increase them in the future, did not really take off due to fears of "greenwashing" - as we can see by the rather limited number of transition bonds issued.

Another potential reason behind the recent underperformance of these green bond indices is duration. Looking at the universe of outstanding green bonds, the average weighted duration (that is, adjusted to outstanding bond values) is 8.7 years (excluding perpetual instruments). This is higher than the one for non-green bonds, where the average weighted duration is a mere 7.4 years. Hence, one could also attribute the underperformance on duration reasons, as economic headwinds have resulted in more flatter bond curves, hence leaving longer-term bonds such as green ones, to underperform.

**Green bond indices have lower volatility**

Besides looking at the overall and relative performance of these green bond indices, we have also evaluated whether these indices are also subject to less risk, as proxied by their market volatility. And indeed, our analysis shows that during our analysis period (2019 until today), volatility has been significantly lower, as shown in the table below.

| | Bloomberg Barclays MSCI | | | | | |
|---|---|---|---|---|---|---|
| | **Global green** | **Global non-green** | **Euro green** | **Euro non-green** | **Euro Corp green** | **Euro Corp non-green** |
| Total volatility | 6.811 | 23.918 | 5.122 | 8.601 | 3.917 | 7.590 |
| Volatility YTD | 6.805 | 23.715 | 6.336 | 10.386 | 4.690 | 8.752 |
| Volatility from 1-1-2019 until 1-3-2022 | 5.717 | 21.232 | 3.598 | 6.349 | 3.197 | 6.425 |
| Sharpe ratio | -0.022 | -0.004 | -0.027 | -0.013 | -0.025 | -0.012 |
| Sharpe ratio YTD | -0.034 | -0.007 | -0.033 | -0.016 | -0.036 | -0.018 |
| Sharpe ratio from 1-1-2019 until 1-3-2022 | 0.005 | 0.002 | 0.006 | 0.003 | 0.005 | 0.003 |
| | **ICE BofA** | | | | | |
| | **Global green** | **Global non-green** | **Euro green** | **Euro non-green** | **Euro Corp green** | **Euro Corp non-green** |
| Total volatility | 7.446 | 13.394 | 4.668 | 10.566 | 3.622 | 9.253 |
| Volatility YTD | 7.347 | 13.243 | 5.636 | 12.521 | 4.342 | 10.759 |
| Volatility from 1-1-2019 until 1-3-2022 | 6.274 | 11.411 | 3.300 | 7.726 | 2.814 | 7.542 |
| Sharpe ratio | -0.020 | -0.007 | -0.030 | -0.011 | -0.031 | -0.010 |
| Sharpe ratio YTD | -0.031 | -0.014 | -0.037 | -0.014 | -0.042 | -0.015 |
| Sharpe ratio from 1-1-2019 until 1-3-2022 | 0.005 | 0.004 | 0.007 | 0.002 | 0.006 | 0.002 |

**Green fields indicates that the performance for green indices was better than their non-green counterparties*

Given that, we have also calculated whether green bond indices have (or had, in the past) a better risk-adjusted return. For that, we calculate the so-called Sharp ratio. As also shown in the table above, green bond indices have, in general, also had a better Sharp ratio. That is especially true for the Bloomberg Barclays MSCI indices. For the ICE BofA green bond indices, however, recent underperformance has also driven the current Sharp ratio to be below the one of their non-green counterparty.

We would also like to point out that the Bloomberg Barclays MSCI green bond indices seem to have a lower volatility than the ICE BofA ones. This is quite interesting and can be attributed to (at least partially) the former's stricter green bond criteria. Perhaps the Bloomberg Barclays MSCI green bond index better mimics the behaviour of dedicated green bond funds, which tend to indeed have a more buy and hold behaviour, reducing the overall price volatility of these bonds.

Overall, we do see that for both providers (Bloomberg Barclays MSCI and ICE BofA), the volatility is significantly below the one of their non-green counterparty. It is therefore fair to assume that green bonds tend to show lower risk (as proxied by volatility), potentially attributed therefore to a lower trading behaviour when it comes to these bonds.

# ESG corporate bond issuance catches-up

Shanawaz Bhimji, CFA – Senior Fixed Income Strategist | shanawaz.bhimji@nl.abnamro.com

- **Volkswagen issued a dual-tranche green bond at lower concessions than all other corporate deals last week**
- **The car manufacturer's greenium in the secondary market is not as consistent as that of its competitor Mercedes Benz**
- **However, VW's better carbon reduction proposition should justifies a higher greenium in our view**
- **JAB also proves that an SLB is perhaps not a suitable instrument for investment holding companies**

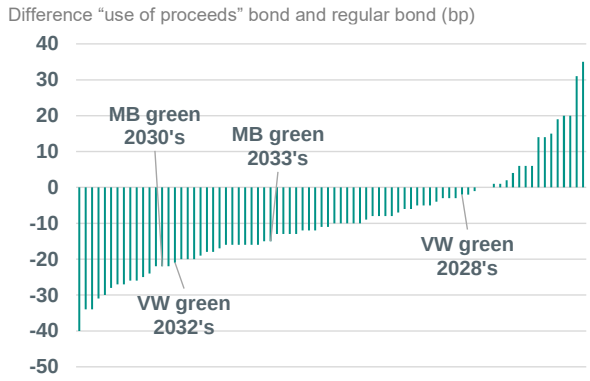
**Volkswagen issues green bond after 2 year hiatus**

After nearly a two year hiatus, German automotive behemoth **Volkswagen** (VW) printed a dual tranche green bond last week. Market conditions were treacherous as the automotive sector has been the third worst performer in the EUR IG corporate bond space so far this year. VW is confronted with a trio of troubles, namely a continued shortage of parts to keep the plants running, a possible energy crunch in Germany and very pessimistic consumer sentiment across the globe, which could hurt future sales. ESG investors focussed on VW's scope 1 footprint should actually be somewhat concerned as the CEO stated last week that the company will continue to power its production facilities in Wolfsburg with coal power due to difficulties the country is facing with regards to sourcing natural gas (VW owns these power-stations) .

**VW greenium less consistent than Mercedes Benz**

VW's latest green bonds had to pay the lowest new issue concession last week amongst all corporate deals brought to the market. We do estimate a greenium for the previously-issued green bonds of the two German car manufacturer's that have so far brought green bonds to the market (Volkswagen and Mercedes Benz). The graph below shows our latest assessment of the greenium in the EUR IG corporate bond market and in our sample of nearly 80 "use of proceeds" bonds (that is, green, social and sustainability), we have managed to make the purest of comparison by looking only at same maturity or close maturity interpolated bond spreads on non-green instruments from the same issuer. In the case of both VW and Mercedes Benz there seems to be a greenium in the secondary bond market. Strangely, the greenium is significantly larger on the longer maturity in the case of Volkswagen, while at Mercedes Benz the greenium is higher in the 2030's vs the 2033's. Mercedes Benz in general tends to command a more consistent greenium, but we feel that carbon focussed investors should actually prefer VW, given its much bigger expansion in the battery electric vehicle (BEV) space.

**Greenium more consistent at Mercedes Benz**

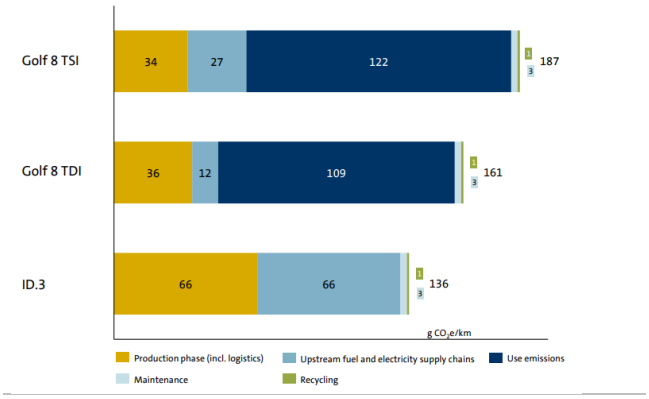



Source: Bloomberg, ABN AMRO Group Economics

**But VW has better carbon reduction potential offered by their BEV's sold so far**

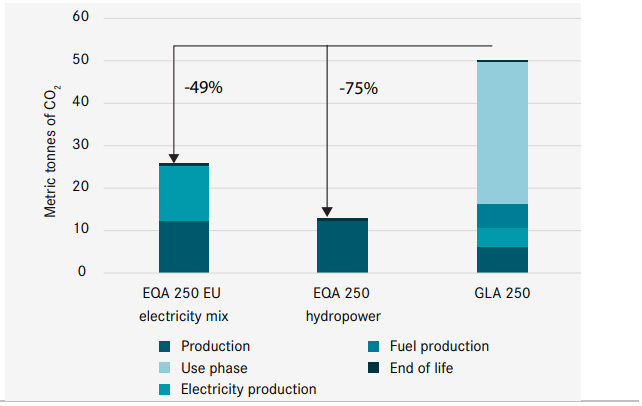
To compare the two car manufacturer's earmarked savings, we look at their BEV sales in 2021. Both manufacturers only started to ramp up BEV production from 2020 onwards. We then multiply the number of BEV vehicles sold by the envisaged full vehicle life cycle carbon emission savings achieved in comparison to a regular petrol powered model based on the EU electricity mix. The charts below, taken directly from the issuers' green bond reporting, showcase this saving:

**VW – lifecycle carbon saving BEV vs ICE**




Source: VW 2021 green bond reporting, CO2 grammes per km

**Mercedes Benz - lifecycle carbon saving BEV vs ICE**




Source: MB 2021 green bond report, CO2 tonnes per 200k km (lifecycle)

By multiplying the savings per vehicle against the number of BEV vehicles sold you get to the total potential CO2 avoided for all BEV vehicles produced during 2021. We had to apply simplification here by assuming that all BEV's sold by both manufacturers generate the same savings as the ones showcased in the issuers' green bond frameworks (i.e. the ID3 against the Golf TSI for VW and the EQA vs the GLA for Mercedes Benz).

| | VW | Mercedes Benz |
|---|---|---|
| **BEV sold** | **452,900** | **99,300** |
| **Vehicle lifecycle CO2 savings BEV vs equiv petrol vehicle (tonne)** | **10.2** | **24** |
| **Total vehicle lifecycle CO2 savings (tonne)** | **4,619,580** | **2,383,200** |

Source: INSIDEEV, company green bond reports

What stands out immediately in the table above is the 4.5 times higher production/sales of BEV's by VW in comparison to Mercedes Benz. This implies that, despite the savings per vehicle being lower at VW (which, by the way, is due to the Golf petrol vehicle commanding lower lifecycle emissions than the Mercedes petrol vehicle), the emission reduction potential of VW remains twice as big as what is being offered by Mercedes Benz.

Now one could argue that VW's still sells the largest part of its vehicles with conventional combustion engines (ICE), but the relevant comparison for this analysis remains Mercedes Benz. In that respect, we note that roughly 5% of VW's total vehicle sales in 2021 were BEV related, while this was 4.3% for Mercedes Benz. Also, when one relates the 2021 vehicle lifetime carbon savings to the total amount of eligible assets (as per latest green bond reports) we get to 1.28kg of CO2 saved per EUR of eligible assets for VW and 1.03kg of CO2 saved per EUR of eligible assets for Mercedes Benz. All-in-all, we judge that VW's current superiority in reducing carbon to Mercedes Benz should also be reflected in a higher greenium in VW's bonds.

**JAB – perhaps an SLB is not the right instrument for investment holding companies.**

**Jab Holding** (JAB) has become the second investment holding company in the EUR IG space offering an SLB, following the footsteps of private equity firm EQT. JAB already issued SLB's in the USD space earlier this year, but opted for more segmentation in the step-ups under the EUR offering, whereby not meeting SBTi verification targets by the end of 2030 results in only 10bp step-up while failing to achieve the desired female board representation has a 50bp step-up already in 2025. Ultimately, the drawback for investors interested in carbon reduction was the lack of ambition shown by JAB on its portfolio companies, where it intends to achieve only SBTi verification for greenhouse gas targets, but is not willing to commit to a downward trajectory. The 46.2% reduction of its own scope 1 and 2 emissions worth 56 metric tonnes recently has very limited impact (56 tonnes is roughly the emissions of 7.5 US households). Scope 1 and 2 emissions also represent only 1% of JAB's total emissions.

The lack of extension of carbon targets to the portfolio companies might be understood from an investment company holding perspective, with the likelihood that JAB will exit certain of its holdings where it has improved the carbon footprint or purchased new companies with a bad carbon footprint before the KPI test date. But that would imply that JAB, much like EQT, has not much to offer for SLB investors that have carbon reduction as priority and the issuer might as well have opted for a regular bond offering. Judging by the combined nearly 60bp of new issue concession that JAB paid on the EUR SLB, investors also seem comfortable about the likelihood that JAB will meet the female representation target. A regular offering would have at least saved JAB advisory, verification and marketing fees.

# Rationalization in gas consumption Dutch industry

Casper Burgering – Economic Transition Economist | casper.burgering@nl.abnamro.com

- **Industry is a large consumer of natural gas with a 40% share in total supply for business use**
- **Within industry, the chemical industry accounts for more than half of the gas consumption**
- **Natural gas consumption in the industry has recently decreased, mainly due to high gas prices**
- **Working on improvement processes, such as smarter heat use, electrification and maximising the circular use of raw materials is a good step towards greater energy efficiency and better results**

The discovery of natural gas in 1959 and its rapid introduction in the 1960s drastically changed the Dutch energy supply. Thanks to the discovery, the Netherlands - from households to industry - gradually made an almost complete switch to gas. The country's natural gas wealth was also used to attract energy-intensive industry from abroad. Some 60 years later, however, the aim is to become gasless.

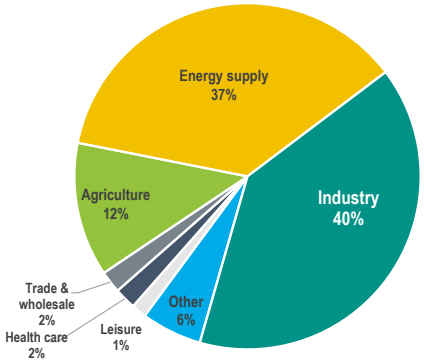
Rationalisation of energy consumption is nothing new in industry. Since the oil crisis in the 1970s, organising the production process and distribution in the chain as efficiently as possible has been recognised as an economic necessity. From then on, all kinds of measures were taken to improve energy efficiency and diversify energy sources. In addition, awareness of global climate change and its connection with greenhouse gas emissions from burning fossil fuels has also added an ecological dimension to rationalisation. Because of these greenhouse gas emissions, the fact that natural gas is a fossil fuel and the earthquakes caused by gas extraction in Groningen, the Netherlands wants to move away from gas completely. This must be achieved by 2050.

**High gas consumption in industry**

The Netherlands uses a total of about 42 billion cubic metres of natural gas annually, of which more than 32 billion cubic metres will be accounted for by economic activities in sectors in 2022. Most of this is consumed by industry (with a 40% share), closely followed by the energy supply (with over 37% share). Some distance behind is the agricultural sector with a 12% share of total consumption by sectors. These three sectors account for almost 90% of gas consumption by Dutch sectors.

**Natural gas supplied for own consumption by sectors**

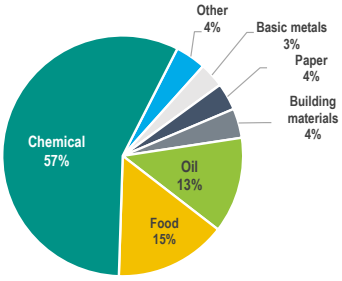
Share of sectors in total supply all companies (in %)




Source: CBS, ABN AMRO Group Economics

**Gas consumption by industrial subsectors**

Share relative to total industry (in %)




Source: CBS, ABN AMRO Group Economics

In Dutch industry, six subsectors are dominant in terms of the amount of gas consumed. Together, these six accounted for over 85-90% of total industrial gas consumption in 2020. The chemical industry accounts for more than half of the gas consumption, followed by the food industry with 15% and then the oil industry.

Natural gas is used in different ways in the industrial subsectors. In the chemical sector it is mainly used for energy purposes (industrial processing), but also partly as a raw material for end products (petrochemicals and fertilisers). The food industry mainly needs low-temperature steam, which requires a lot of gas. The refining of oil requires a great deal of energy, and this uses a lot of natural gas, which in turn results in greenhouse gas emissions from the oil refineries. In the building materials industry, gas is indispensable to reach the necessary high temperatures in furnaces. This is particularly the case in the glass

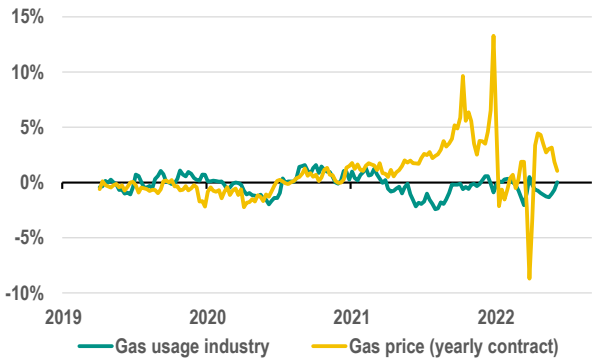
and ceramics industries. The basic metal industry also needs gas to reach high temperatures for the melting process, while the paper industry uses a lot of energy (among which gas) in the drying process.

**Less gas consumption**

Total gas consumption in the Netherlands was considerably lower on an annual basis in the first quarter of 2022. This was mainly due to high natural gas prices, but also because it was a lot warmer than a year ago (see also our **note here**). In industry, natural gas consumption also decreased significantly, alongside higher gas prices.

**Gas consumption industry versus gas price**

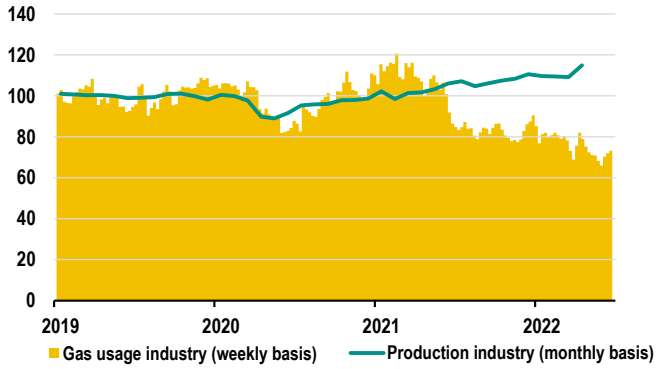
In % on weekly basis




Source: Refinitiv, CBS, ABN AMRO Group Economics

**Gas consumption industry versus production industry**

Index (2019=100)



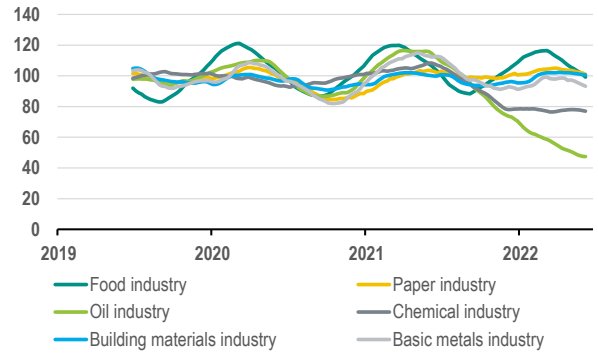

Source: CBS, ABN AMRO Group Economics

In the first 23 weeks of 2022, gas consumption is more than 20% lower than in the same period last year. However, the downward trend in gas consumption in industry started after the first quarter of 2021, when gas prices rose significantly more. Compared to 2021, TTF gas prices for monthly and annual contracts increased by a factor of 3 to 5 in the first quarter of 2022.

A high gas price is an incentive for many companies to reduce their gas consumption and to implement efficiency measures in the production process. In industry, this has partly succeeded since the second half of last year. Production has increased further in that period, while gas consumption has fallen sharply. But this does not apply to all industrial subsectors.

**Trend in gas consumption by industrial subsectors**

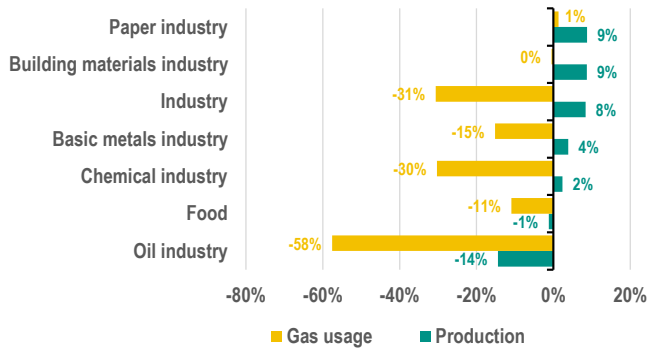
Index (2019=100); 6-months moving average




Source: CBS, ABN AMRO Group Economics

**Gas consumption versus production in Q1 2022**

% on yearly basis




Source: CBS, ABN AMRO Group Economics

In the oil industry, both production and gas consumption are lower on an annual basis. However, the rate of decline is diverse. For example, in the first quarter of 2022, oil production decreased by over 14.4% on average, while natural gas consumption decreased by 58% on average in the same period. In the chemical industry, gas consumption decreased by 30% in the first three months of this year on average on an annual basis, while production increased slightly by 2.4%. Energy efficiency has also increased in the food industry, driven by a 1.2% drop in production compared to an 11% drop in gas consumption in the first three months of this year. However, the basic metals industry shows a sharp drop in gas consumption in the first quarter of this year (of 15%), while production increased by 3.9%. The lower gas consumption in these industrial sectors has contributed to the 11% annual reduction in greenhouse gases in total industry.

**Gas crisis!**

The gas crisis in the Netherlands is a fact and the stepping up of gas-saving measures are more crucial than ever. For this reason, the government has largely abolished the production restriction for coal-fired power stations until 2024, in order to replenish the gas reserves in the Netherlands for the coming winter. After all, gas that does not need to be used to generate electricity now can be stored to meet demand in the winter months. A tender system has also been activated whereby companies (including industrial companies) can bid for how much they are willing and able to reduce their gas consumption. Moreover, the government has announced all kinds of financial incentives to encourage energy conservation in both households and businesses. And if that doesn't get things going, then some more compelling measures will be taken as next steps in the Gas Crisis Plan.

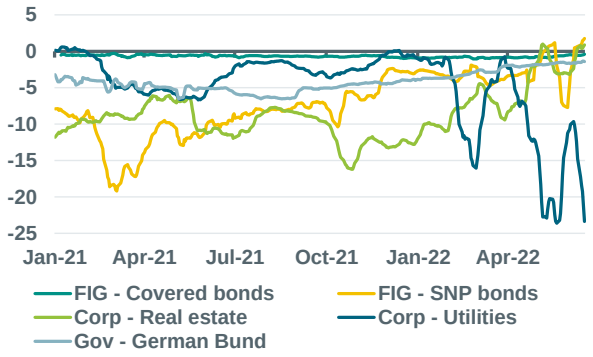
These various forces have mixed effects on emissions. On the one hand, gas-to-coal switching increases emissions. On the other, efficiency reduces it. Given the speeding up of the energy transition, it is aimed that the switch to coal would be a temporary phenomenon.

The current high gas prices have already proved to be an incentive for many private institutions to reduce their energy costs and increase efficiency. For large-scale consumers of natural gas in particular - such as many companies in industry - this translates directly into lower production costs and therefore a better financial returns. Working on process improvements, smarter heat use, further electrification and maximum circular use of raw materials is a good step towards greater energy efficiency. Electrification seems to be the holy grail in this to be able to take the really big steps. The pace of reduction in gas consumption can therefore be stepped up considerably as soon as the long delivery times - due to the lack of availability of technical experts - and grid congestions are resolved. But this will not happen overnight, unfortunately.

# ESG in figures

## ABN AMRO Secondary Greenium Indicator

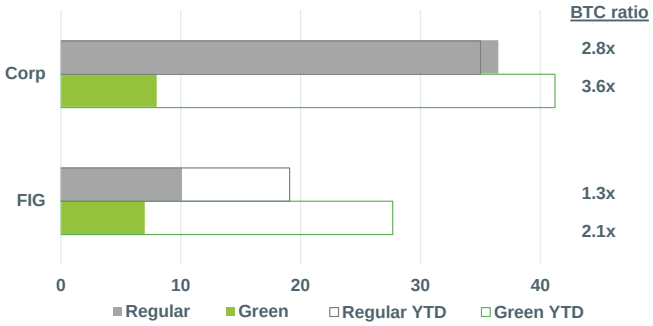
Delta (green I-spread – regular I-spread)




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

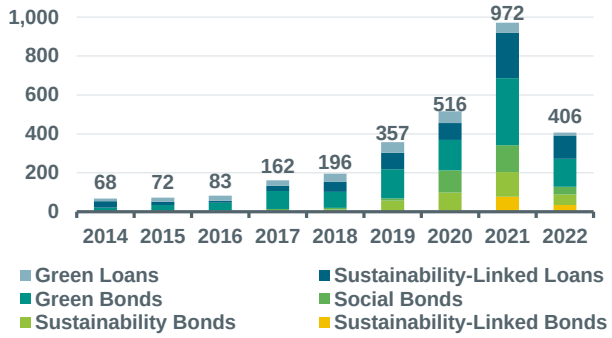
NIP in bps




Note: Data until 23-06-22. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics.

## Sustainable debt market overview

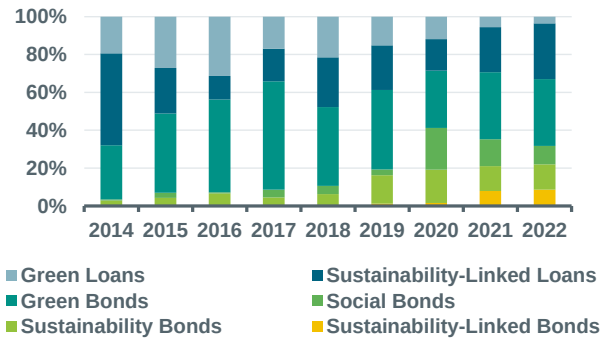
EUR bn




Source: Bloomberg, ABN AMRO Group Economics

## Breakdown of sustainable debt by type

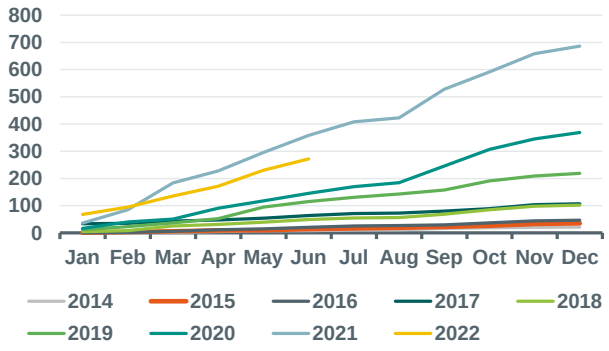
% of total




Source: Bloomberg, ABN AMRO Group Economics

## YTD ESG bond issuance

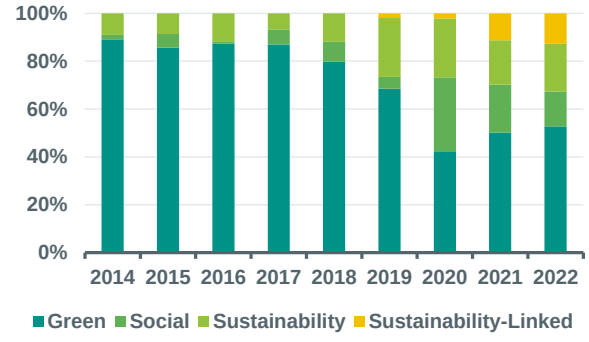
EUR bn




Source: Bloomberg, ABN AMRO Group Economics

## Breakdown of ESG bond issuance by type

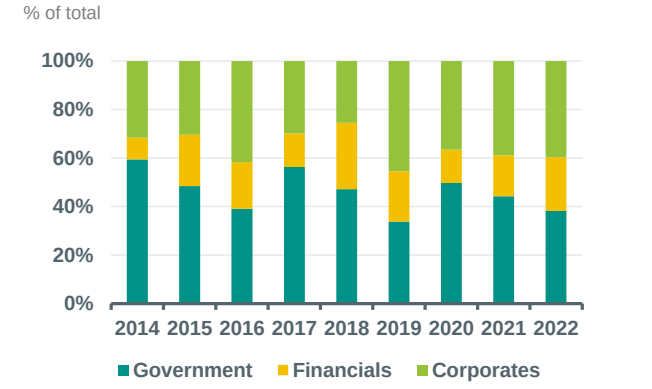
% of total




Source: Bloomberg, ABN AMRO Group Economics

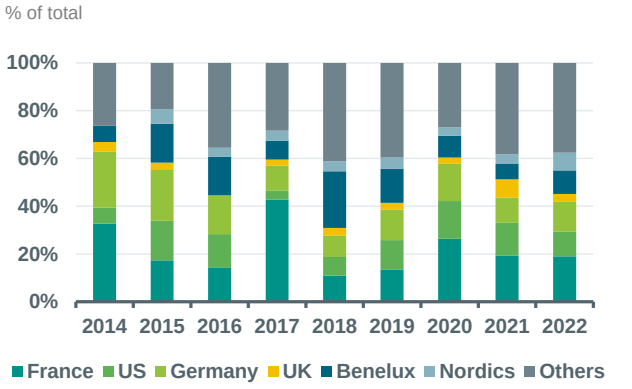
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

## Breakdown of ESG bond issuance by sector



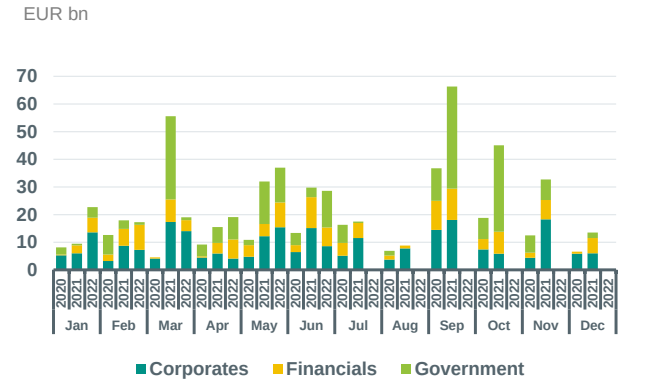

Source: Bloomberg, ABN AMRO Group Economics

## Breakdown of ESG bond issuance by country



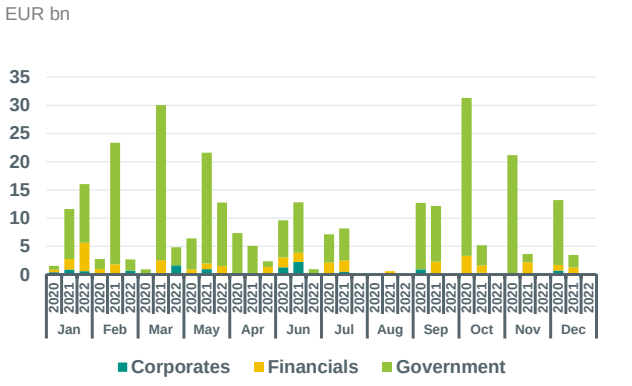

Source: Bloomberg, ABN AMRO Group Economics

## Monthly Green Bonds issuance by sector



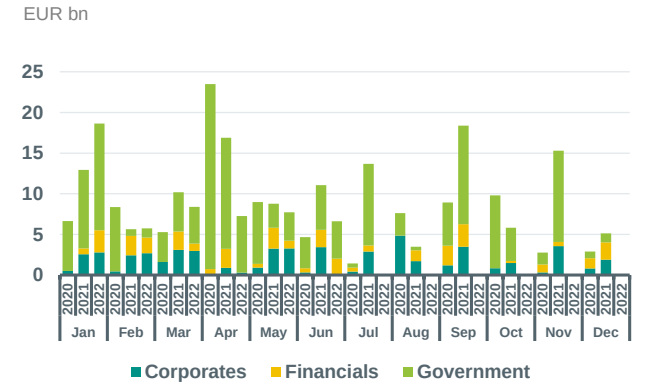

Source: Bloomberg, ABN AMRO Group Economics

## Monthly Social Bonds issuance by sector



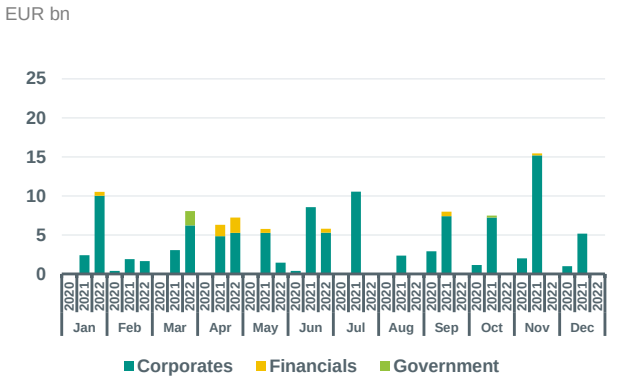

Source: Bloomberg, ABN AMRO Group Economics

## 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.

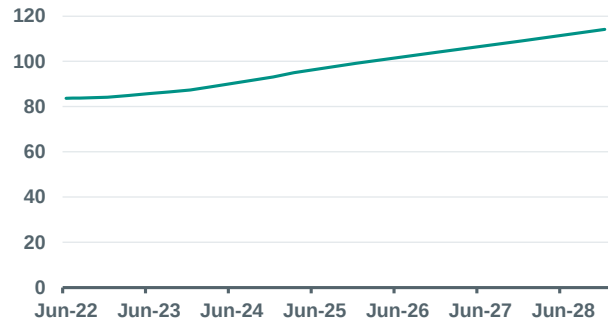
## Carbon contract current prices (EU Allowance)

EUR/MT


Source: Bloomberg, ABN AMRO Group Economics

## Carbon contract future prices (EU Allowance)

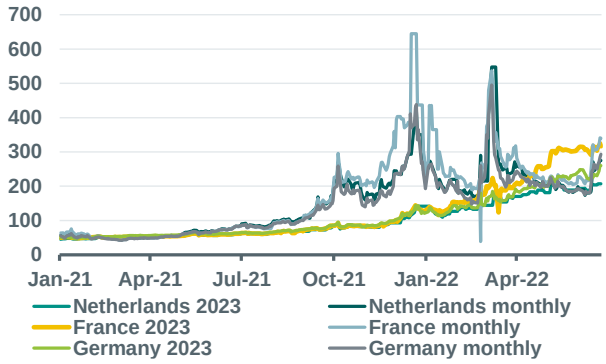
EUR/MT




Source: Bloomberg, ABN AMRO Group Economics

## Electricity power prices (monthly & cal+1 contracts)

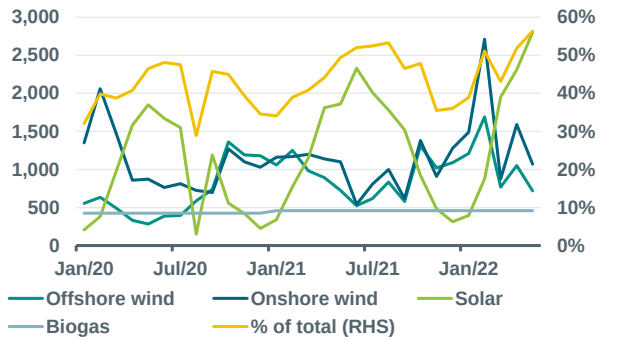
EUR/MWh




Source: Bloomberg, ABN AMRO Group Economics. Note: 2023 contracts refer to cal+1

## Electricity generation from renewable sources (NL)

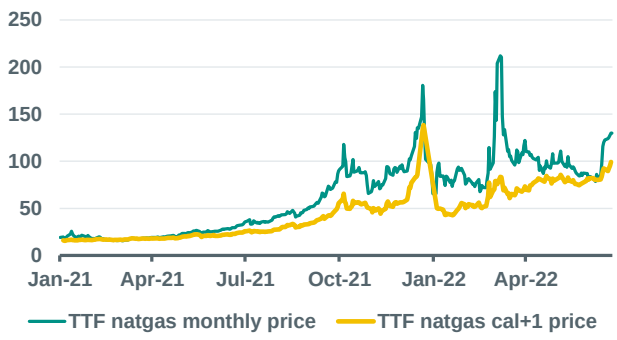
GW % of total




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

DISCLAIMER

ABN AMRO Bank
Gustav Mahlerlaan 10 (visiting address)
P.O. Box 283
1000 EA Amsterdam
The Netherlands

This material has been generated and produced by a Fixed Income Strategist ("Strategists"). Strategists prepare and produce trade commentary, trade ideas, and other analysis to support the Fixed Income sales and trading desks. The information in these reports has been obtained or derived from public available sources; ABN AMRO Bank NV makes no representations as to its accuracy or completeness. The analysis of the Strategists is subject to change and subsequent analysis may be inconsistent with information previously provided to you. Strategists are not part of any department conducting 'Investment Research' and do not have a direct reporting line to the Head of Fixed Income Trading or the Head of Fixed Income Sales. The view of the Strategists may differ (materially) from the views of the Fixed Income Trading and sales desks or from the view of the Departments conducting 'Investment Research' or other divisions

This marketing communication has been prepared by ABN AMRO Bank N.V. or an affiliated company ('ABN AMRO') and for the purposes of Directive 2004/39/EC has not been prepared in accordance with the legal and regulatory requirements designed to promote the independence of research. As such regulatory restrictions on ABN AMRO dealing in any financial instruments mentioned in this marketing communication at any time before it is distributed to you do not apply.

This marketing communication is for your private information only and does not constitute an analysis of all potentially material issues nor does it constitute an offer to buy or sell any investment. Prior to entering into any transaction with ABN AMRO, you should consider the relevance of the information contained herein to your decision given your own investment objectives, experience, financial and operational resources and any other relevant circumstances. Views expressed herein are not intended to be and should not be viewed as advice or as a recommendation. You should take independent advice on issues that are of concern to you.

Neither ABN AMRO nor other persons shall be liable for any direct, indirect, special, incidental, consequential, punitive or exemplary damages, including lost profits arising in any way from the information contained in this communication.
Any views or opinions expressed herein might conflict with investment research produced by ABN AMRO.
ABN AMRO and its affiliated companies may from time to time have long or short positions in, buy or sell (on a principal basis or otherwise), make markets in the securities or derivatives of, and provide or have provided, investment banking, commercial banking or other services to any company or issuer named herein.

Any price(s) or value(s) are provided as of the date or time indicated and no representation is made that any trade can be executed at these prices or values. In addition, ABN AMRO has no obligation to update any information contained herein.
This marketing communication is not intended for distribution to retail clients under any circumstances.
This presentation is not intended for distribution to, or use by any person or entity in any jurisdiction where such distribution or use would be contrary to local law or regulation. In particular, this presentation must not be distributed to any person in the United States or to or for the account of any "US persons" as defined in Regulation S of the United States Securities Act of 1933, as amended.

CONFLICTS OF INTEREST/ DISCLOSURES
This report contains the views, opinions and recommendations of ABN AMRO (AA) strategists. Strategists routinely consult with AA sales and trading desk personnel regarding market information including, but not limited to, pricing, spread levels and trading activity of a specific fixed income security or financial instrument, sector or other asset class. AA is a primary dealer for the Dutch state and is a recognized dealer for the German state. To the extent that this report contains trade ideas based on macro views of economic market conditions or relative value, it may differ from the fundamental credit opinions and recommendations contained in credit sector or company research reports and from the views and opinions of other departments of AA and its affiliates. Trading desks may trade, or have traded, as principal on the basis of the research analyst(s) views and reports. In addition, strategists receive compensation based, in part, on the quality and accuracy of their analysis, client feedback, trading desk and firm revenues and competitive factors. As a general matter, AA and/or its affiliates normally make a market and trade as principal in securities discussed in marketing communications.

ABN AMRO is authorised by De Nederlandsche Bank and regulated by the Financial Services Authority; regulated by the AFM for the conduct of business in the Netherlands and the Financial Services Authority for the conduct of UK business.