

SustainaWeekly

Green investment up...but not enough

- ▶ **Economist:** Global clean energy investment levels continue to rise, reaching an estimated USD 1740 bn this year, but the pace of expansion looks set to slow compared to the buoyant pace of last year. At this year's pace, investment would fall well short of a net zero scenario, and the pace of expansion would need to double next year and remain at that rate to 2030 to reach the levels needed.
- ▶ **Strategist:** May saw a pick-up in issuance of ESG bank bonds. Overall, EUR 5.4bn of green bonds and EUR 2bn of social bonds were issued up until 26 May, accounting for 20% of total issuance. ESG bank bonds continue to benefit from stronger demand and lower new issue premiums than non-ESG bank bonds. The first social Tier 2 bond since August 2022 was the most oversubscribed ESG bank bond so far this year.
- ▶ **Sector:** Both the Netherlands as the EU are lagging behind in efforts to reduce GHG emissions from road mobility. A step up in pace of transition is needed and indeed they have set ambitious targets. However, we doubt that the target will be hit. The adoption of battery electric vehicles could slow down. Moreover the needed trajectory is substantially steeper compared to the historical trend.
- ▶ **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 take a closer look at the IEA's World Energy Investment 2023 publication and data, which was released recently. We assess recent trends in energy investment and to what extent they are consistent with a net zero scenario. We highlight some worrying trends in clean energy investment on the basis of the organisation's early estimates for this year. We go on to look at issuance of ESG bonds this month. Finally, we look at trends in emissions in the mobility sector, policies that have been set out to bring down emissions and whether policy targets are likely to be hit.

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

Worrying trends in green investment

Nick Kounis – Head Financial Markets & Sustainability Research | nick.kounis@nl.abnamro.com

- ▶ **Global clean energy investment levels continue to rise, reaching an estimated USD 1740 bn this year, but the pace of growth looks set to slow compared to the buoyant pace of last year**
- ▶ **In addition, investment trends remain uneven, with investment modest in emerging and developing countries, which make up a third of global emissions**
- ▶ **At this year's pace, investment would fall well short of a net zero scenario, and the pace of expansion would need to double next year and remain at that rate to 2030 to reach the levels needed**
- ▶ **Though numerous policy initiatives – in the US, Europe and China – do signal stronger expansion ahead**

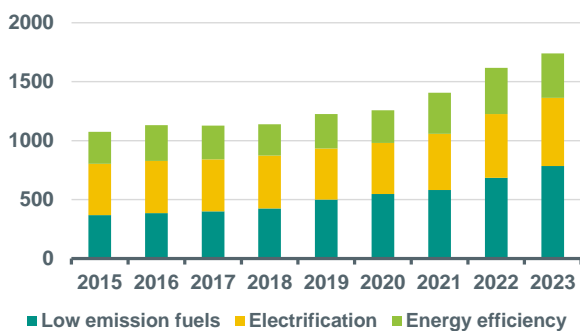
We take a closer look at the IEA's World Energy Investment 2023 (see [here](#)), which was released recently. We assess recent trends in energy investment and to what extent they are consistent with a net zero scenario. We highlight some worrying trends in clean energy investment on the basis of the organisation's early estimates for this year.

Clean energy investment growth looks set to slow

The annual level of global clean energy investment looks likely to continue its upward trend according to the IEA, rising to USD 1740 bn this year from 1617bn in 2022 and compared to USD 1074bn in 2015. That was the good news. The bad news is that this would represent a slowdown in the pace of green investment growth. Following 11.8% annual growth in 2021 and 14.8% in 2022, the expansion of clean investment is estimated to have slowed to 7.6% in 2023. Almost all components of green investment slowed, but there was particular weakness in investment in energy efficiency, which is seen lower this year than last year.

Global clean energy investment levels

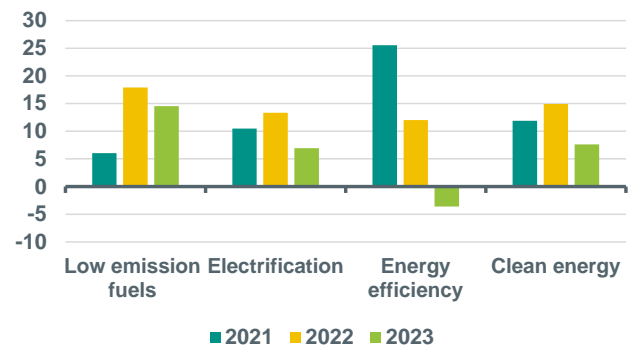
USD bn (2022)



Source: IEA, ABN AMRO Group Economics

Global clean energy investment growth

% yoy



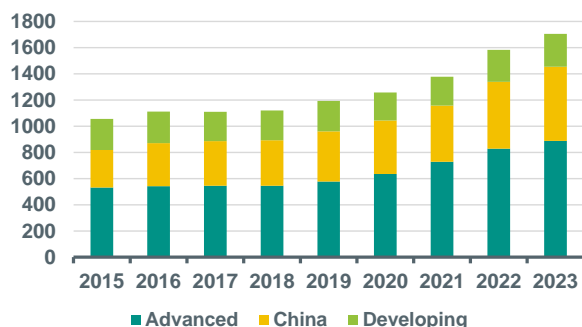
Source: IEA, ABN AMRO Group Economics

Clean energy investment low in developing countries

Over the last few years, the level of clean energy investment has increased strongly in the advanced economies and also in China. These economies dominate clean energy investment as shown in the chart on the left below. However, the acceleration as well as the overall levels of green investment is far more modest in emerging and developing countries. Clean investment in these countries is less than 15% of the global total, while their carbon emissions amount to around a third of total global emissions. So the decarbonisation of these economies is crucial if we are to see global warming limited to 1.5 degrees. The lack of impetus so far to help these countries finance the energy transition looks to be a major obstacle for the global economy achieving a Net Zero scenario (see our note [here](#) for more on this).

Clean energy investment breakdown

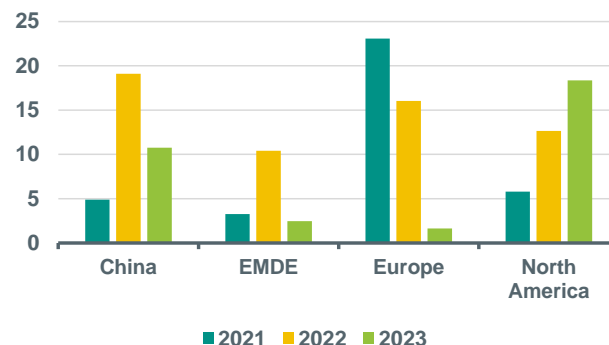
USD bn (2022)



Source: IEA, ABN AMRO Group Economics

Clean energy investment growth by region

% yoy



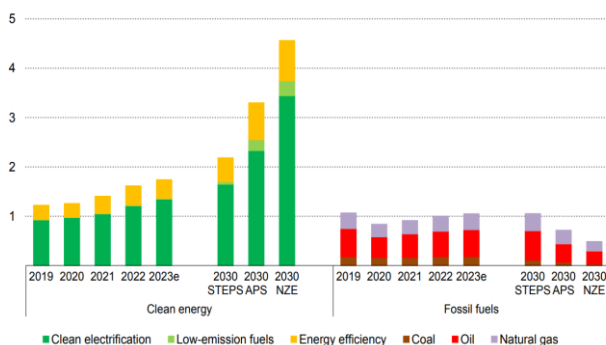
Source: IEA, ABN AMRO Group Economics

Growth in green investment estimated to have slowed sharply in Europe

Looking more closely at estimated growth rates for this year (see chart on the right above), it looks like the growth in clean investment continued to accelerate sharply in North America, but it slowed elsewhere. While in China, the pace of growth remained strong, it looks to have slowed sharply in emerging and developing countries, but also in Europe. In the case of Europe, it should be noted that the pace of expansion was particularly buoyant during 2021 and 2022, so there might be some volatility in these numbers. Looking at the details, it seems that there was some fall back in energy efficiency investments, following booming growth over the last two years. The pace of expansion of investment into renewables also slowed, but remained decent. A more concerning trend is that investment in electricity networks slowed to a crawl, and that this was the second successive year of slowing capital spending growth.

Clean energy investment recently vs scenarios

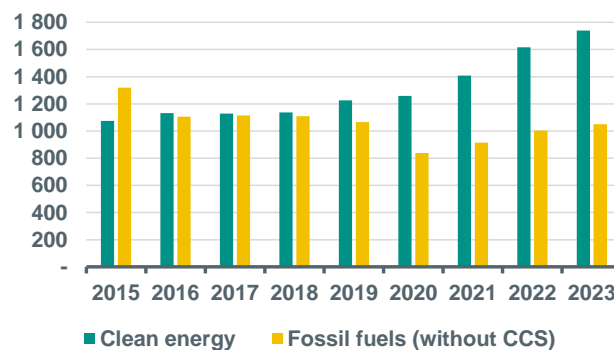
USD trillion (2022)



Source: IEA, ABN AMRO Group Economics

Clean energy investment growth by region

USD bn (2022)



Source: IEA, ABN AMRO Group Economics

Investment falling well short of a net zero scenario

Developments in clean energy investment have been impressive over the last few years and since 2019 they have exceeded fossil fuel investments by an increasing margin (see chart on the right). However, the fact is that these trends will need to become much more impressive for a successful energy transition. The chart on the left shows recent green investment levels compared to IEA estimates of green investment in 2030 in a Stated Policies Scenario (STEPS – based on current policies and targets backed by detailed policies), in an Announced Pledges scenario (APS – based on all climate commitments and targets) and a Net Zero Emissions by 2050 Scenario (NZE). Green investment growth would need to roughly double next year compared to this year's estimated rate and remain at that pace till 2030 to be consistent with NZE by 2050. To look on the bright side, a number of policy initiatives – in the US, Europe and China – do signal stronger expansion ahead.

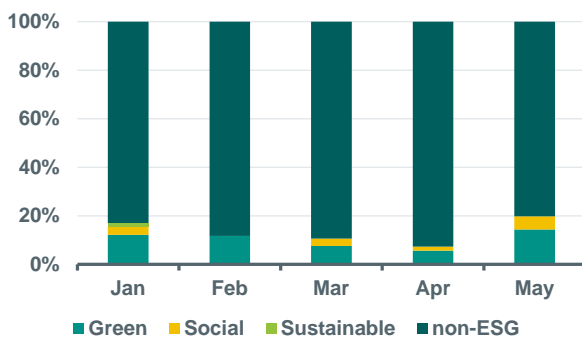
ESG issuance of bank bonds jumps in May

Joost Beaumont | joost.beaumont@nl.abnamro.com

- ▶ May saw a pick-up in the issuance of ESG bank bonds
- ▶ ESG bank bonds continue to benefit from stronger demand and lower new issue premiums than non-ESG bank bonds
- ▶ The first social Tier 2 bond since August 2022 was the most oversubscribed ESG bank bond so far this year

The month of May is nearing its end and with only a few days left it seems that banks stepped up issuance of ESG bonds this month. EUR 5.4bn of green bonds and EUR 2bn of social bonds were issued up until 26 May, accounting for 20% of total issuance. This is the highest monthly share so far this year (see graph below) and well above the 14% average (which is the share of ESG bank bond issuance in 2022 as a whole).

Share of ESG bonds in total EUR bank debt supply

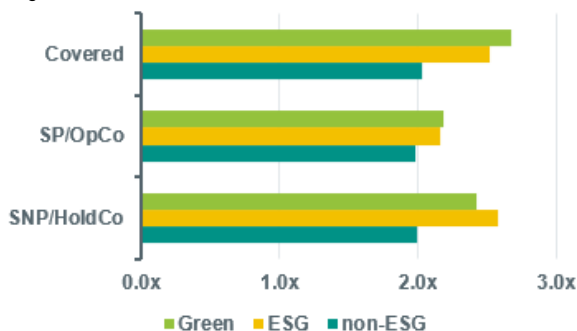


Source: Bloomberg, ABN AMRO Group Economics

The EUR 7.4bn of ESG bank bonds (including covered bonds) were met with almost EUR 20bn of demand, resulting in an average bid-to-cover ratio of 2.7x. However, demand was rather mixed in May, with bid-to-cover ratios ranging from 1.1x to 9.2x. Still, on balance, ESG bank bonds benefit from a larger investor base as well as some funding advantage. The graphs below show the average bid-to-cover ratios and new issue premiums of green, ESG, and non-ESG bank bonds. This year, ESG bank bonds attracted around 25% more demand than non-ESG bank bonds, while the average new issue premium was more than 2bp lower.

Average BTC ratio for (non) ESG bank bonds

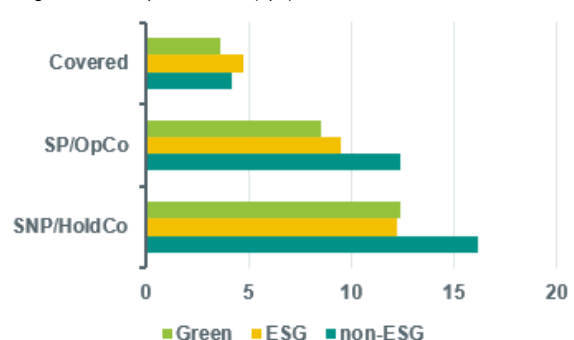
Average bid-to-cover ratio



Source: Bloomberg, ABN AMRO Group Economics

Average NIP for (non) ESG bank bonds

Average new issue premia YTD (bps)



Source: Bloomberg, ABN AMRO Group Economics

It is interesting to note that the market welcomed the first social Tier 2 bond since August last year. French issuer BPCE raised EUR 500mn with a 10NC5 social Tier 2, which was priced at MS +265bp and attracted EUR 4.6bn of demand. This made it the most oversubscribed ESG bank bond of this year so far. The proceeds of the bond will be used for loans granted to 'clients whose activities contribute to local economic development across the employment conservation and creation category'. More specifically, these are 'loans to customers or projects with geo-scoring of areas with high unemployment/low income/low job creation...', which tend to support access to decent work and economic growth, reducing poverty and reviving economically depressed areas (see [here](#)).

Road mobility is lagging behind reducing GHG emissions

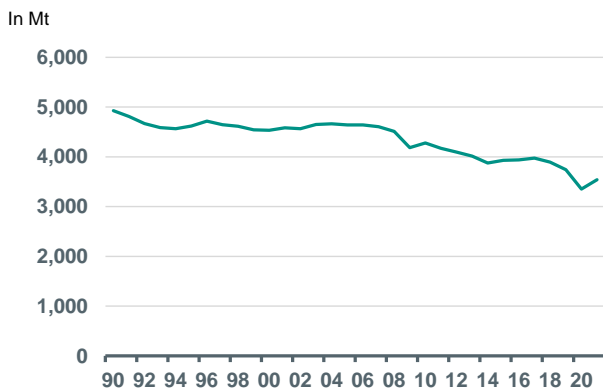
Georgette Boele – Senior Economist Sustainability | georgette.boele@nl.abnamro.com

- ▶ In 2021, EU27 GHG emissions were down 28% compared to 1990
- ▶ But emissions from road mobility are 16% higher compared to 1990
- ▶ Both the Netherlands as well as the EU lag behind in reducing GHG emissions from road mobility
- ▶ So they need to step up and indeed they have set ambitious targets
- ▶ We doubt that the target will be hit. The adoption of battery electric vehicles could slow down
- ▶ Moreover the needed trajectory is substantially steeper compared to the historical trend

Where do we stand in terms of GHG emissions for road mobility

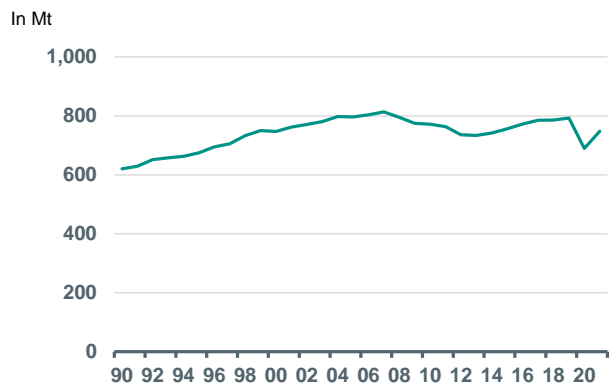
According to Eurostat, the EU emitted 3,541 Megaton of greenhouse gas emissions in 2021 and the mobility sector accounted for 22% of that total or 782 Megaton. EU 27 GHG emissions were down 28% at the end of 2021 compared to 1990. However this doesn't apply to emissions from road mobility, which are 16% higher compared to 1990. Emissions from the different sub-categories of road mobility show increases of between 12% (emissions by cars) and 64% (emissions by light duty vehicles) compared to 1990. In 2021, the Netherlands emitted 175 Megaton and the mobility sector accounted for 15% of those emissions or 25.5 Megaton. According to the CBS, the mobility sector in the Netherlands emitted 29.6 Megaton in 2022, meaning that there is a moderate downward trend excluding the impact of the pandemic compared to 1990 when the mobility sector emitted 32.2 Megaton. So if we take this all together the mobility sector clearly lags behind in terms of reducing greenhouse gas emissions compared to whole-economy trends both in the EU as a whole and the Netherlands. For the EU, the trajectory for emissions in road mobility needs to change completely.

GHG emissions EU 27



Source: Eurostat, ABN AMRO Group Economics

GHG emissions road transport



Source: Eurostat, ABN AMRO Group Economics

Road transport is the biggest emitter in the mobility sector. It is responsible for around 95% of the total emissions of the mobility sector. Passenger cars account for around 50% of emissions of the mobility sector. Commercial vehicles account for around 40% of the GHG emissions (38% for EU 27, 43% for NL). This is the sum of emissions and percentages of heavy duty, light duty vehicles, buses and construction traffic.

Policy by the Netherlands to reduce emissions from road mobility

The EU and the Netherlands have set the goal to reduce emissions of greenhouse gasses (GHG) by at least 55% in 2030 compared to 1990 levels and make the EU climate neutral by 2050. The policy in the Netherlands is aimed at a reduction of 60% by 2030 and to be net zero in 2050. To reduce GHG emissions by the mobility sector, the EU and the Netherlands have set ambitious targets for this sector. In this section we discuss the emission targets and policy announced by the Dutch government and the European Commission (EC) to reduce emissions for the mobility sector. We start with the Netherlands followed by that of the EC. The Dutch government's target for the mobility sector is to reduce greenhouse gas emissions to 21 Megaton in 2030, this means a reduction of 8.6 Megaton compared to 2022. Every sub-category needs to contribute its share. As there are no sub-sector targets we assume that the reductions are all the same in percentage terms. The total

reduction target is 8.6 Megaton by 2030 so cars need to emit 4.4 Megaton less by 2030 and commercial vehicles 3.8 Megaton less.

Policy on cars

The Dutch government's policy is that every new car sold from 2030 onwards has to be a zero-emission car. This can be battery electric car or a hydrogen fuel cell electric car. In the Netherlands, the fleet of 8.8 million passenger cars was responsible for roughly 14.8 Megaton greenhouse gas emissions in 2022. In 2030 the fleet of cars that emit greenhouse gasses is expected to be 6.3 million passenger cars (internal combustion and hybrid vehicles). This is based on the assumption that the share of battery electric vehicles in total sales will increase by 9% annually to reach 100% in 2030 and that the annual sales will roughly remain around 440,000 on average. The total greenhouse gas emissions of these 6.3 million passenger cars could be around 10.7 Megaton. So, by introducing the measure that all new passenger cars in 2030 have to be zero-emission cars, greenhouse gas emissions could drop from 14.8 megaton to 11 Megaton or a reduction of 3.8 Megaton by 2030. So based on these assumptions and our own calculation making and an approximation of emission per vehicle and fleet we expect cars to emit 3.8 Megaton less by 2030. This falls short of the 4.4 Megaton needed (mentioned above).

What if the reality differs from these assumptions? For example, what if the adoption of battery electric cars were to slow in pace. At some point in time the consumers that could afford battery electric vehicles already bought them and consumers that can't afford them decide to drive longer with their cars that emit emissions. As a result total sales will slow and the amount of battery electric vehicles in the total fleet will rise more slowly. Therefore emissions would decline at a slower pace than the above mentioned scenario. We think that if the total fleet has 500,000 less zero-emission cars then emissions could only reduce by 3 Megaton compared the above estimate of 3.8 Megaton. So the Dutch government may need to fine-tune the policy in the coming years to make zero emission cars more affordable via for example subsidies. Another option is that the government may opt to speed up the adoption of zero-emission vehicles by consumers if it turns out to be that there are more challenges to bring down emissions of commercial vehicles.

Policy for commercial vehicles

From 2025, all new buses used in public transportation should be zero-emission buses and they must use regional produced renewable energy. From 2030, all buses used in public transportation should be zero-emission buses. In addition, all vehicles used by the state should be zero emission as well in 2030. In 2019, the European Clean vehicles directive (CVD) was adopted and in 2021 this directive was implemented in the Netherlands as the 'Regeling bevorderen schone wegvoertuigen' (Pianoo, 2021b). The regulation obliges government agencies to tender a minimum percentage of clean vehicles in European tenders for vehicles and transport services. All modes of road transport are covered by the regulation. This regulation is forecast to reduce emissions by 0.4 Mton in 2025 (source CE Delft). Finally, there are also new developments in city logistics. For example, around 30 to 40 municipalities in Netherlands will introduce zero emissions zones for trucks and vans in 2025. The expected CO2 reduction of this measure is 1 Megaton (Klimaatnota 2022).

The effects of all the measures are taken together the mobility sector could emit around 8.6 Megaton less in 2030 (also based on calculations from the government and from CE Delft on the effect of the other measures). This is the total needed reduction for the mobility sector. So based on this the government could hit the target for mobility.

Will the target be reached?

We doubt that the target will be hit. The adoption of battery electric vehicles could slow down. Moreover the trajectory is substantially steeper compared to the historical trend. Road mobility emitted 32.3 Megaton in 1990. So between 1990 and 2022 emissions only fell by 2.6 Megaton. By 2030 the mobility sector needs to see emissions decline by 8.6 Megaton. Compared to historical standards this seems very steep and may be improbable. For personal cars affordability and charging infrastructure are the main challenges. For commercial vehicles to meet emission reduction targets there are three main challenges: the range and freight challenge, refuelling infrastructure challenge and the charging infrastructure challenge (see our [ESG Economist – No easy road to decarbonizing mobility](#)).

Policy by EU27 to reduce emissions from road mobility

The EU has set the goal to reduce emissions of greenhouse gasses (GHG) by at least 55% compared with 1990 levels and make the EU climate neutral by 2050. As indicated above the emissions of road transport are on an upward trajectory compared to 1990. So there not only needs to be a change in direction but also a substantial reduction in emissions. To reduce GHG emissions by the mobility sector, the EU has set ambitious targets for this sector.

Ban on new sales of cars and vans with internal combustion engines by 2035

A key policy is the ban on sales of new cars and vans with internal combustion engines by 2035. In June 2022, the European Parliament backed the European Commission's proposal. Intermediate emissions reduction targets for 2030 would be set at 55% for cars and 50% for vans compared to 2021. Members of the European Parliament voted to ban the sale of new combustion engine cars by 2035. The Environment Ministers at the European Council agreed to this ban from 2035. However, the European Council left the door open to CO2 neutral fuels as decarbonization alternatives to electrification. The ban was approved by Parliament in February 2023 by a small margin. But it had to be formally endorsed by the Council on 7 March. This vote was postponed but in the end approved. EU ministers signed off on 28 March on the ban of sale of combustion engines from 2035. But there will be extra technical legislation setting out a workaround for e-fuels. This still needs to be approved by EU institutions.

ETS

On 22 December 2022, the European Council and Parliament agreed to create a new, separate emissions trading system for the buildings and road transport sector and fuels for additional sectors, in order to ensure cost-efficient emissions reductions in these sectors that have been difficult to decarbonise so far. The new system will apply to distributors that supply fuels to buildings, road transport and certain other sectors. The co-legislators agreed that the system will start in 2027. The linear reduction factor is 5.43% from 2028. So from 2028 the number of allowances will decrease by 5.43%. On top of that they will auction upfront 30% of the total volume of the number of allowances to secure a smooth transition path. In the case that energy prices were to be exceptionally high, the start of the new ETS would be delayed until 2028. Once the system has started if the price of allowances exceed EUR 45 over a certain period of time, additional allowances will be released increasing the supply on the market.

Other measures

On 14 February 2023, the European Commission proposed ambitious new CO2 emissions targets for new heavy-duty vehicles (HDV). The proposed targets for new HDV are as follow: 45% emission reductions by 2030 compared to 1990 levels, 65% emission reductions by 2035 and 90% emission reductions by 2040. So HDV should from 2030 on emit 45% less CO2 emissions compared to 2019 levels. Emissions in the HDV sector have been increasing year-on-year since 2014 (except 2020). Especially in the freight sector emissions are increasing rapidly. These vehicles run for 99% on internal combustion engines largely fuelled by diesel. City busses will have to be zero emissions by 2030 according to the plans.

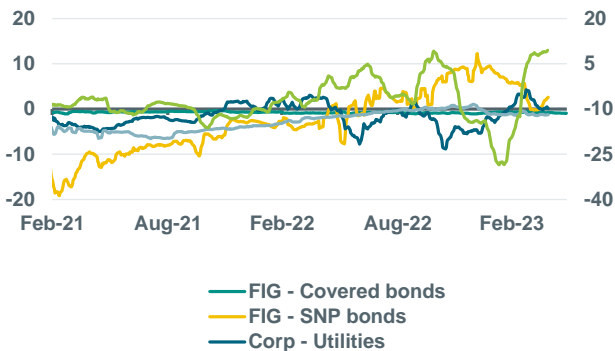
Conclusion

The Netherlands has done better in terms of emission reductions for road mobility compared to 1990 than the EU. But both the EU and the Netherlands are lagging behind a net zero trajectory. Any way we look at it the targets are very ambitious and the annual pace of emission reduction is high compared to historical standards. So the task of bringing down emissions for road transport is enormous.

ESG in figures

ABN AMRO Secondary Greenium Indicator

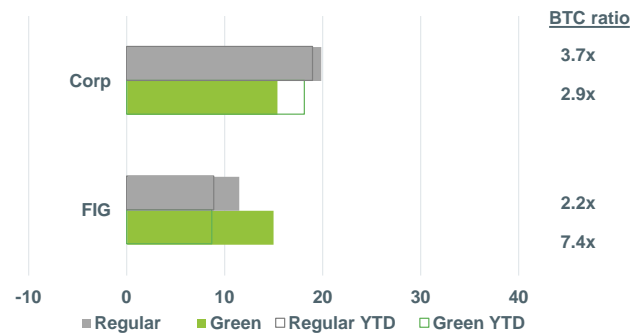
Delta (green I-spread – regular I-spread)



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

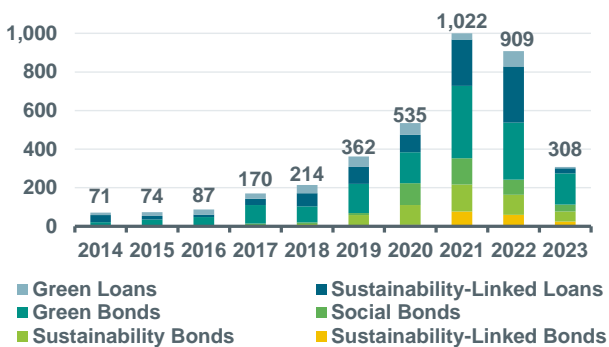
NIP in bps



Note: Data until 25-05-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

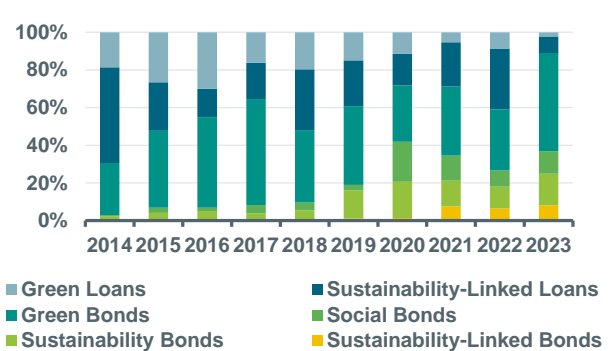
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

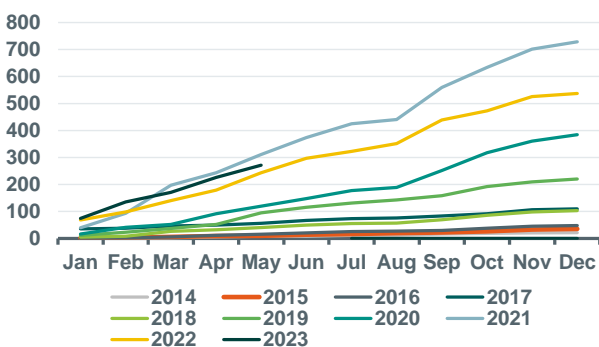
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

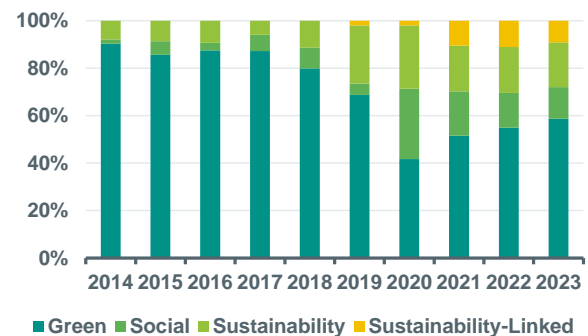
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

% of total

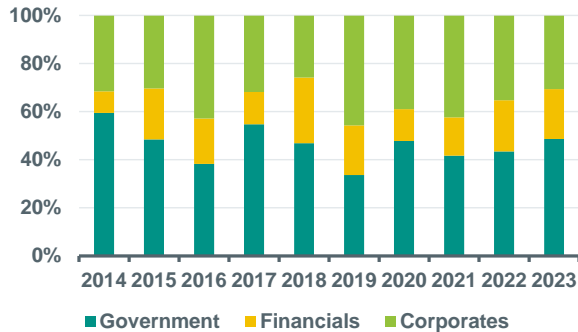


Source: Bloomberg, ABN AMRO Group Economics

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

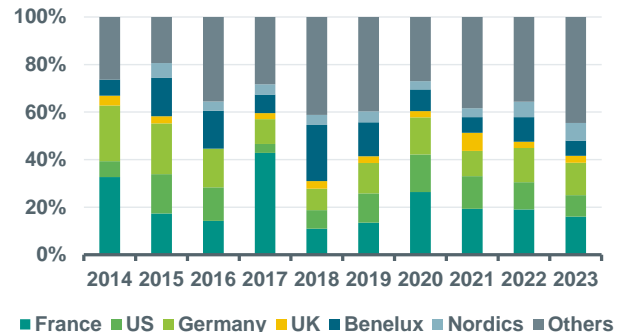
% of total



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country

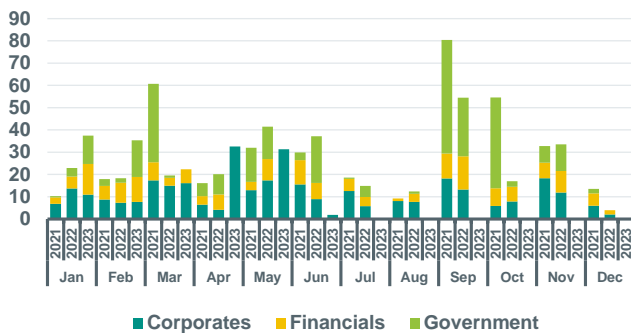
% of total



Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector

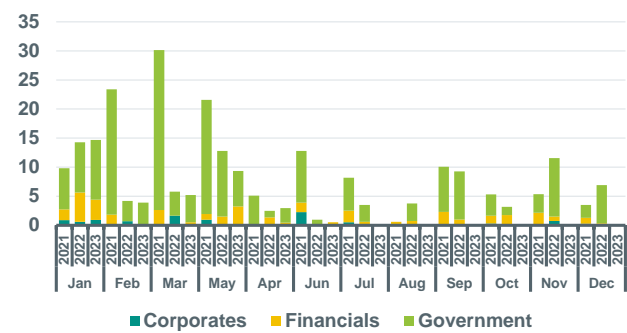
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector

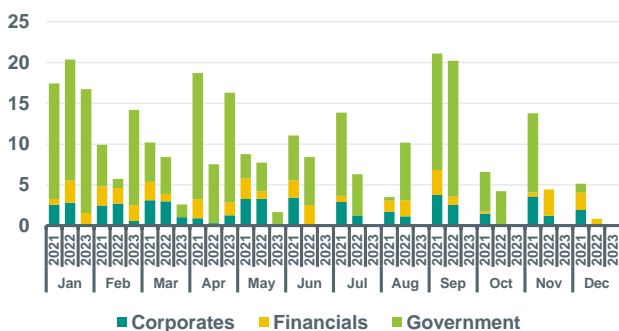
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Monthly Sustainability Bonds issuance by sector

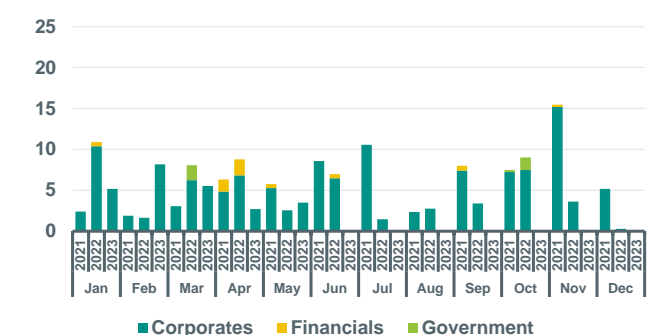
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Monthly Sust.-Linked Bonds issuance by sector

EUR bn



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)

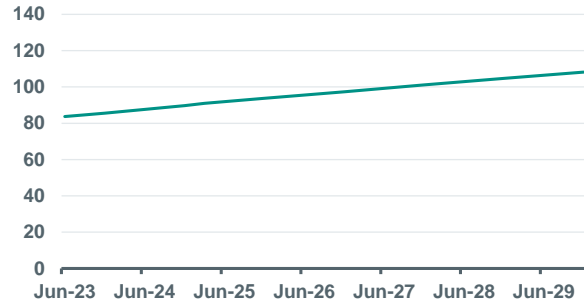
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)

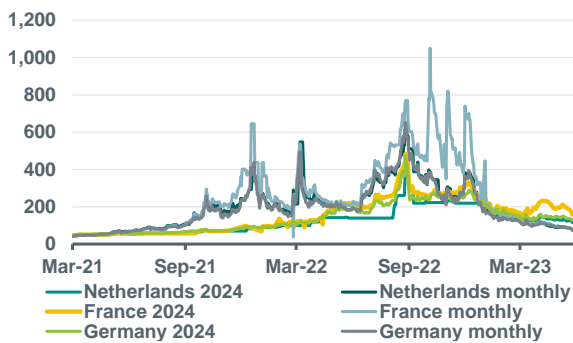
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

EUR/MWh

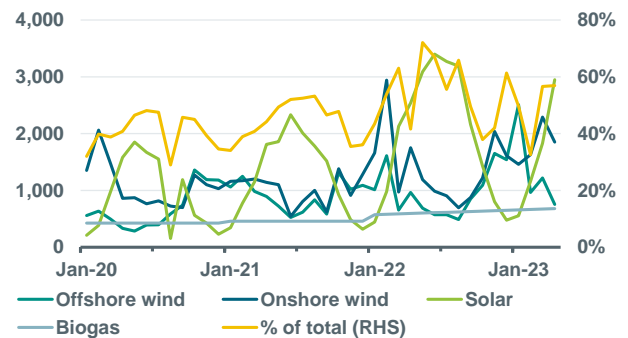


Source: Bloomberg, ABN AMRO Group Economics. Note: 2024 contracts refer to cal+1

Electricity generation from renewable sources (NL)

GW

% of total



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

TTF Natgas prices

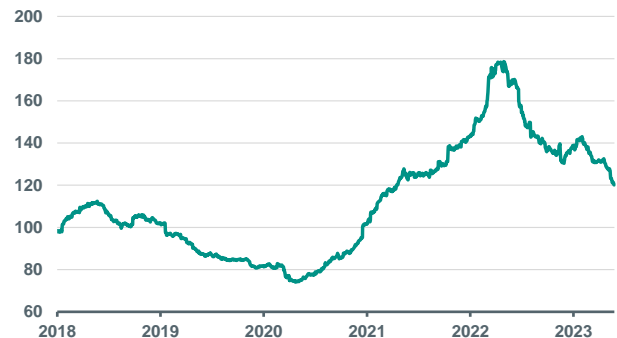
EUR/MWh



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

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