SustainaWeekly

Europe's grill problem

- **Economist:** **Coordinating the speed of progress of different components of the energy transition is essential to avoid bottlenecks. The increase in grid investments needs to run before those of renewables or electrification as the time required to plan and execute network extensions is longer than other clean technologies. The slowdown in investment of grids and network expansions could therefore delay the pace of transition.**

- **Strategist:** **We assess whether interest coverage at issuers which have printed ESG bonds will end-up being more affected than the interest coverage at non-ESG issuers. We find that the effects on coverage seem to be more severe for the ESG issuers. However, these ESG issuers have a slightly better coverage to begin with and therefore the higher interest rates are only equalizing the aggregate ICR between ESG and non-ESG real estate issuers.**

- **Sector:** **The number of heat pumps installed in the built environment has risen sharply. However, to achieve the set climate targets, further scaling-up is necessary during this year and next, while the higher installation pace would need to be maintained thereafter. Several policy measures should give scaling-up traction in the coming years. But currently there are still too many obstacles to overcome.**

- **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 focus on the speed and sequencing of the energy transition. Indeed, coordinating the speed of progress of different components of the energy transition is essential to avoid bottlenecks. In this respect we zoom in on the need for grid and network expansion to be an early mover in order to facilitate other sectors. Unfortunately, there are some concerning signs here. We then go on to assess whether interest coverage at issuers which have printed ESG bonds will end-up being more affected than the interest coverage at non-ESG issuers in an environment of higher interest rates. Finally, we take a closer look at the pace of heat pump installations and whether it is fact enough to be consistent with a Net Zero scenario.

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

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Transition Speed and Capacity Building

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- **There is an increase in all renewable and electrification deployments in Europe**
- **Coordinating the speed of progress of different components of the energy transition is essential to avoid bottlenecks and achieve a smooth transition**
- **The increase in grid investments needs to run before those of renewables or electrification as the time required to plan and execute network extensions is longer than other clean technologies**
- **A slower transition because of insufficient grid capacity is magnified because of the mismatch in the timeframe for deploying grid extensions versus that needed for electrification or renewable deployments**

Energy transition

The energy transition at its core is driven by policy, technological progress, or a change in preferences. These drivers are envisioned to facilitate the switch towards renewable resources for electricity generation, along with the electrification and efficiency improvements for final consumption and production activities.

The dynamic nature of the energy transition makes it quite a complex process as it involves many factors changing at the same time. One important factor in accelerating the transition is through increasing the speed of deployment of clean technologies to build up the needed capacity as quickly as possible. However, such increase in the speed of investments could turn to be ineffective if the associated infrastructure is absent or does not grow at a faster speed. For example, all transition channels will lead to a rise in electricity supply and demand. This would also mean that grid capacity should be raised to avoid any mismatch between supply and demand.

Challenges for a smooth transition

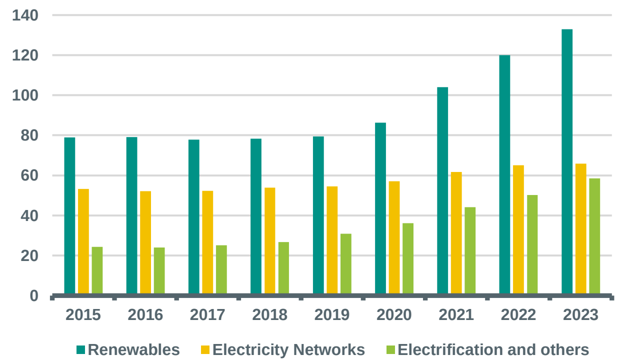
There are many issues that affect the pace of deployment for clean energy investments which could be considered as bottlenecks that hinder the transition process, such as: policy and price uncertainties in the associated markets; issues with permitting; challenging and complex supply chains; high financing costs; the long term horizon of renewables projects; grids and electricity networks.

In the subsequent sections, we zoom in some of these bottlenecks especially those related to the speed of progress of different components/factors of the energy transition. We focus on the electricity market for Europe and contrast the current capacity building for renewable technologies, electrification, and the capacity of electricity networks (grids).

Where do we stand in terms of investments in clean technologies in Europe?

Investments in clean technologies in Europe

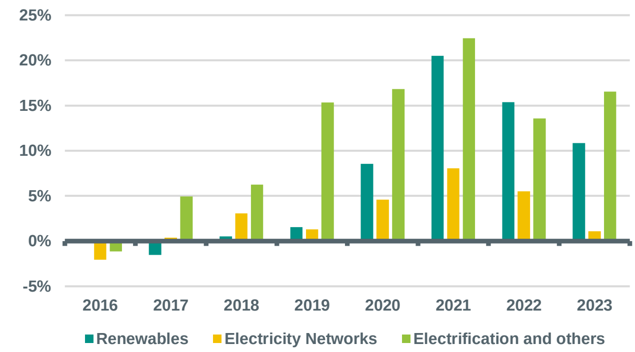
In billions $2022



Source: IEA, ABN AMRO Group Economics

Growth in investments in clean technologies

In percentages



Source: IEA, ABN AMRO Group Economics

The left hand panel in the figure above shows an increase in investments in clean technologies for all components of the power market, with electrification reflecting a proxy for the demand side. While the right hand side panel reflects the growth rate of these investments, which has been positive and rising over the past 5 years.

At a first glance, the panels above deliver positive news for the transition as all transition channels seem to work and money is flowing in the required direction. However, this rosy picture should be seen with an eye of caution especially in the medium and long term. More precisely, the right hand panel highlights some worrying trends. In particular, the growth in investments for supply and demand of the power market outpace that of grids and network expansions. Such trends if continued show that grid capacity will inevitably form a bottleneck that hinders the speed of transition.

Inefficiencies could rise due to grid congestions, and could create issues beyond national electricity markets at a European level by limiting the potential of trading electricity between non-neighbouring states. Grid congestions would also lead to higher electricity prices, which reduces the attractiveness of clean technologies, postpone/mitigate investments in electrification, and increase of the cost of the transition, leading to a slower transition. The problem of limited grid capacity and its effect on the transition is already starting to come to the surface for many European countries. In the Netherlands, plans for an energy tax on fossil fuels are objected by businesses, with the argument that the rise in fossil fuel costs will be associated with a limited capacity of electricity grids to meet the surge in demand by industrial electrification. Similarly, the limited German electricity grid transmission capacity is insufficient to match the imbalanced demand between the Northern and southern states, nor does it allow for electricity trading between its neighbouring countries. All in all, these trends highlight the importance of coordinating the speed of progress for different components of the power market (supply, demand, and the grid), which is essential to avoid bottlenecks and achieve a smooth and efficient transition.

Timeframes for grid expansions

One would ask the question: why are grid expansions lagging behind other clean investments? One answer to this question is related to the complexity of the grid expansion process, which involves many stakeholders (public and private) on a national and regional level, which in turn requires coordination on several levels. Moreover, there are long lead times for permitting grid projects because of inefficiency in permitting procedures, along with the extra time needed to adjust and adhere to new regulations. All these aspects contribute to the extension of the timeframe needed for planning and executing grid projects. More precisely, and according to an IEA representative, the time needed for grid extension projects (4 years on average) is almost double that of other renewable projects, for example.

This is an alarming sign: a slower transition because of insufficient grid capacity is magnified because of the mismatch in the timeframe for deploying grid extensions versus that needed for electrification or renewable deployments.

Transition speed for electricity demand and supply

Abstracting from the grid capacity problem, another mismatch in the speed of transition could arise between the growth in the supply and demand of electricity, or even across power demand sectors, which also risk hindering the transition. That is, if growth in the demand of electricity outpaces growth in supply, electricity prices will rise inducing lower incentives to electrify or switch away from dirty technologies. Similarly, within sectors that use electricity for consumption or production purposes, if one sector is transitioning at a faster rate than others, transition could be slowed down through intersectoral feedback loops (spill-over effects). For example, if electrification deployments take place in the transportation sector at a faster pace than other sectors, assuming everything else remains constant, transportation's demand for fossil fuel goes down while that for electricity goes up, which make fossil fuels relatively cheaper and more attractive to be used by other sectors, reducing incentives to speed up the transition in these sectors.

All these mechanisms and possible transition impediments highlight the need for coordinating transition speed across different components of the system. Governments could play an essential role in this regard by providing a comprehensive vision and timeline for the transition of different sectors, streamlining and standardizing permitting procedures, and facilitating coordination between different stakeholders.

Real estate issuers which printed ESG bonds face a higher refunding drag

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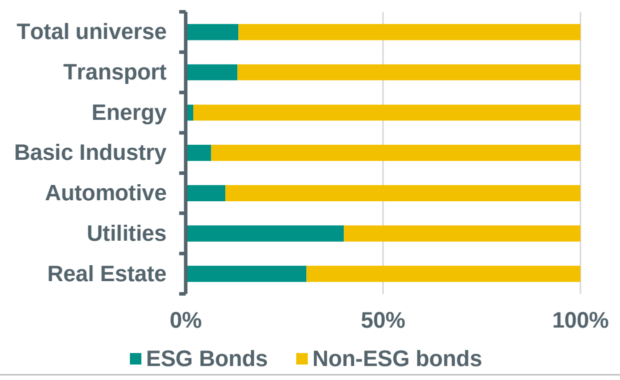
- **Higher interest rates are affecting the cost of debt for all types of real estate issuers**
- **We assess whether interest coverage at issuers which have printed ESG bonds will end-up being more affected than the interest coverage at non-ESG issuers**
- **As this could potentially put ESG real estate bonds on the back foot, given that these also trade at a lower credit spread than their non-ESG equivalent**
- **Based on the refinancing of the issuers' 2023 and 2024 maturities at today's yield on a 4 year maturity bond of that same issuer, the effects on coverage indeed seem to be more severe for the ESG issuers**
- **However, these ESG issuers have a slightly better coverage to begin with and therefore the higher interest rates are only equalizing the aggregate ICR between ESG and non-ESG real estate issuers**

The real estate sector has been a large issuer in the ESG bond space, largely through use of proceeds green bonds. Indeed, many issuers already have or are willing to invest in properties which meet the required demands in terms of energy label for example. The chart below shows that out of all the energy intensive sectors, real estate ranks second (after utilities) in terms of share of ESG bonds in the total EUR IG bond mix.

A high share of ESG bonds in the EUR IG real estate space



Source: ICE BofAML, Bloomberg, ABN AMRO Group Economics

ESG bonds issued by real estate companies tend to trade at a lower spread than their same issuer non-ESG equivalent in the secondary markets. Also on aggregate level this trend is confirmed as shown in the table below where we split bonds into ESG or non-ESG and calculate the average credit spread for 4 most occurring credit rating cohorts on three different duration buckets. The table shows that in the majority of cases the average ESG bond spreads sits lower than the average non-ESG bond spread.

	3-4y duration		4-5y duration		5-6y duration	
	ESG	NON-ESG	ESG	NON-ESG	ESG	NON-ESG
A3	141 (lower)	266	168 (lower)	237	218 (lower)	236
BBB1	207 (lower)	324	271 (lower)	374	262 (lower)	278
BBB2	259 (lower)	424	489 (higher)	473	397 (same)	398
BBB3	572 (lower)	606	733 (higher)	479	621 (higher)	601

Source: ICE BofAML, Bloomberg, ABN AMRO Group Economics

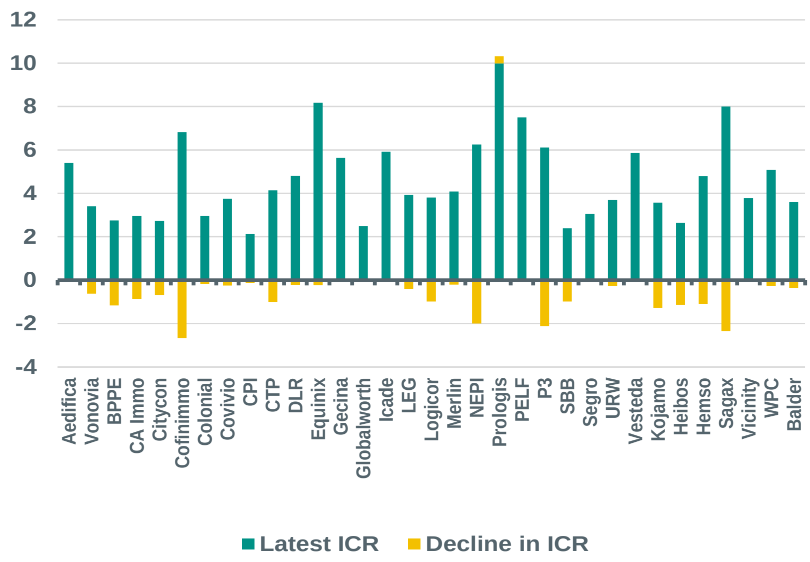
But could this lower credit spread not be compromised in case the ESG real estate bond issuers are facing higher refinancing risks than the real estate issuers, which have not issued ESG bonds? Investors could then perhaps start to put the environmental features on the back-burner and focus on traditional credit fundamentals, especially given the sharp rise in interest rates.

The refinancing drag is indeed larger at ESG real estate bond issuers

We first split the EUR IG real estate bond universe into issuers which have at least 1 ESG bond outstanding (any currency) and issuers that have not issued ESG bonds. We then capture each issuer's total 2023 and 2023 maturities and associated cost of debt on these maturities through the DDIS function in Bloomberg as this allows us to be as comprehensive in terms of upcoming maturities by also including different currencies and also the issuer's bank- or privately arranged debt. Assuming that the issuer refinances these 2023 and 2024 maturities at the yield quoted today on the issuer's 4 year maturity bond, we get to the change in cost of debt. This increase is tagged on to the existing cost of debt in in the denominator of the issuer's latest EBITDA based interest rate coverage (ICR - we take the latest available rating agency calculated ICR as our base). The charts below (ESG issuers) and on the next page (non-ESG issuers) show the existing ICR and the pro-forma decline in ICR on the back of refinancing at today's higher interest rate.

ICR after refinancing – ESG bond real estate issuers

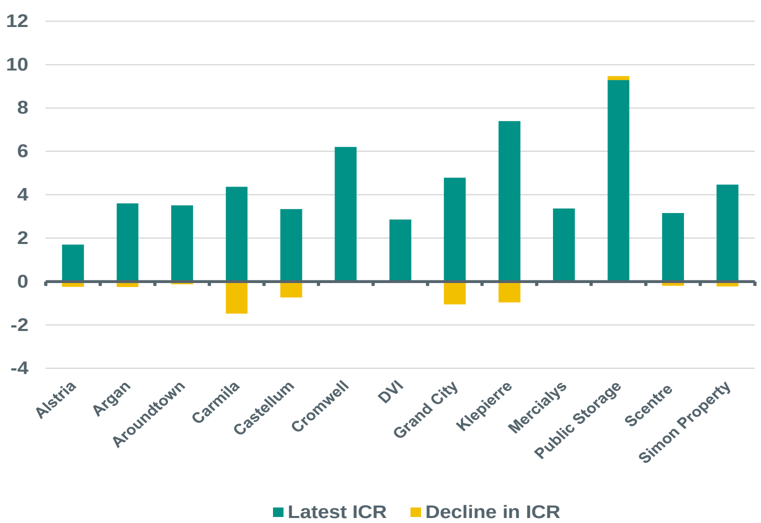
ICR (=EBITDA/Interest expenses)



Source: ICE BofAML, Bloomberg, S&P, Moody's, Fitch, ABN AMRO Group Economics

ICR after refinancing – non-ESG bond real estate issuers

ICR (=EBITDA/Interest expenses)



Source: ICE BofAML, Bloomberg, S&P, Moody's, Fitch, ABN AMRO Group Economics

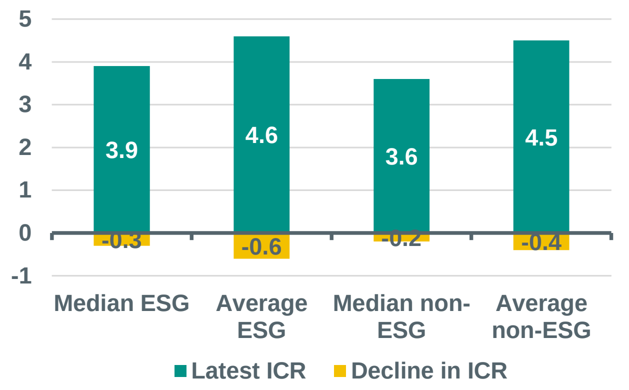
This analysis does have caveats. We have, for example, taken trailing EBITDA and not forecasted EBITDA on issuer level. But the purpose is to purely isolate for refunding effects, which therefore allows us to be rudimentary in our approach. Upon comparing the two charts above, we note that for 78% of the ESG issuers there would be a drop in ICR, whilst the decline would take place at 69% of the non-ESG issuers. The drag also seems to be larger at ESG issuers; a 2 points or more drag in ICR is visible at **Cofinimmo, NEPI, 3P** and **Sagax**.

But real estate's ESG issuers are starting with slightly better coverage

Does this higher refinancing drag mean that the lower credit spread achieved on bonds by ESG issuers could be compromised? Not necessarily, since the ESG issuers are luckily blessed with a higher ICR to start with. The chart on the next page shows the latest median and average ICR for both ESG and non-ESG issuers and it seems under both measures the ESG issuers have a slight advantage in their latest ICR (so before refunding). Indeed, the likes of **Prologis, Equinix** and **Sagax** have one of the highest starting ICR's in the full universe. On a median level the ESG issuer ending ICR is slightly superior to non-ESG after the theoretical refinancing burden, while on average level the non-ESG ICR would become slightly superior. Overall it seems then that some degree of equality is reached between ESG and non-ESG issuers should they refinance upcoming maturities . With ESG issuers (and specifically their underlying bonds) still benefiting from a larger investor base, the spread difference shown in the first table should therefore still remain in favour of ESG issuers.

ESG issuer are starting with slightly better coverage

ICR (=EBITDA/Interest expenses)



Source: ICE BofAML, Bloomberg, S&P, Moody's, Fitch, ABN AMRO Group Economics

Scaling up in production and installation of heat pumps inevitable

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- **The number of heat pumps installed in the built environment has risen sharply**
- **To achieve the set climate targets, further scaling-up is necessary in the short term**
- **Several policy measures should give scaling-up traction in the coming years**
- **But currently there are still too many obstacles to overcome**

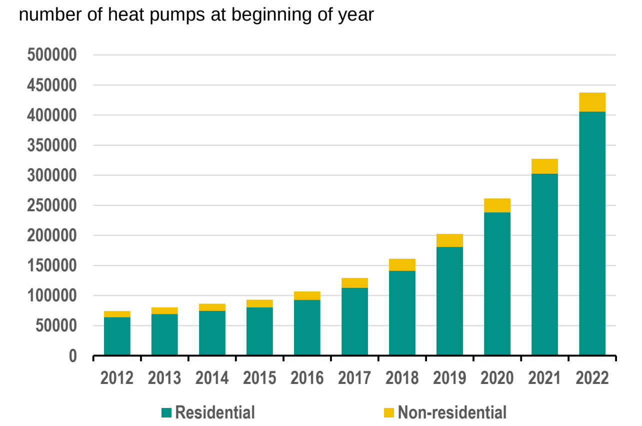
The built environment is a major consumer of gas. Some 40 per cent of total energy consumption goes to the built environment, with natural gas having a prominent share. The direct route of natural gas use in homes is for space heating and cooking, and indirectly, natural gas is used for electricity generation. However, the vast majority of gas consumption is for heating rooms. To make the transition to carbon-free built environment a reality, many homes need to be made gas-free in the coming years. In this respect, heat pumps are receiving increasing attention and a faster scale-up is therefore badly needed.

Trends in heat pumps

Many heat pumps rely on the use of electricity and also natural gas. These are the hybrid heat pumps commonly installed in homes. This variant therefore continues to require a gas connection. Air-to-water and air-to-air heat pump systems mainly use electricity, as the heat pump's compressor needs power. This also applies to geothermal and water-to-water heat pumps. However, both use less electricity than the air-to-water and air-to-air variants. The geothermal pumps are often ideal for new builds or large-scale renovations. In this analysis, we leave out air-to-air systems (similar to an air conditioner), as they are less effective as a main residential heating system and are not used for heating domestic hot water.

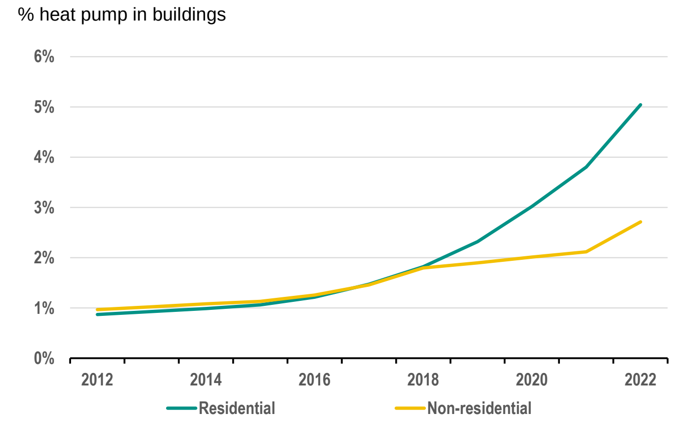
The number of installed heat pumps in the built environment (excluding air conditioners) in the Netherlands has risen sharply in recent years. For instance, over 340,000 heat pumps have been installed in homes in the last 10 years, a growth of 533%. In non-residential buildings, the number of heat pumps has grown slightly less rapidly. There, over 21,000 heat pumps (excl. air conditioners) have been installed since 2012, or a growth of 215%. In this case, non-residential buildings are buildings not used for living, greenhouses and stables. Non-residential buildings include accommodation that has a function other than residential, such as offices, hospitals, sports halls and schools. The growth in the number of heat pumps will continue in the coming years, fuelled partly by climate policy and currently also reinforced by geopolitical stress and the high gas prices.

Number of heat pumps (non) dwellings (no airco's)



Source: CBS, ABN AMRO Group Economics

Penetration rate of heat pump (no airco's)



Source: CBS, ABN AMRO Group Economics

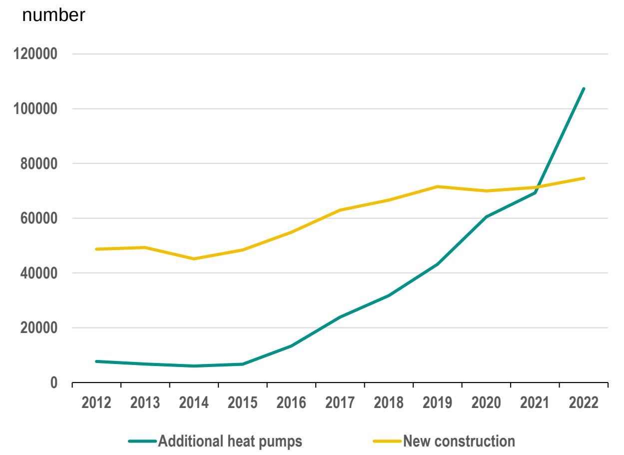
The penetration rate of the heat pump - this is the extent to which the heat pump has penetrated the built environment - has also increased with the growth of installed heat pumps in recent years. Again, a difference can be seen between residential and non-residential properties. Over the past ten years, the share of heat pumps (without counting air conditioners) relative to the number of dwellings has increased by more than 4 percentage points, and for non-residential buildings it is almost 2 percentage points. However, as shown in the chart on the right above, the absolute percentage of heat pumps in buildings remains low.

Not just new construction

Of the more than 8 million homes in 2022 (baseline), more than 6.1 million homes do not yet have a heat pump acting as a main heating system. These homes have individual central heating boilers. The remaining almost 2 million homes currently have block heating, district heating or are electrically heated. According to the Dutch Climate Agreement, 1.5 million existing homes must be off natural gas by 2030. This is the ambition. To achieve this, one of the conditions is that from 2026 hybrid heat pumps will be the minimum standard for heating homes (and also non-residential buildings). This should partly become the catalyst for achieving the climate targets.

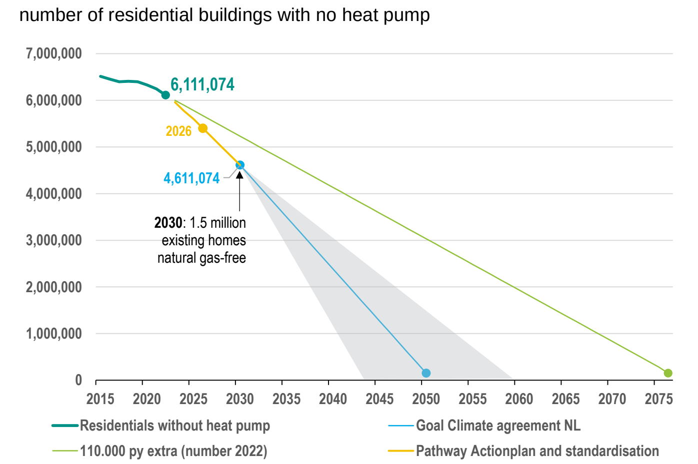
By making the hybrid heat pump mandatory for existing homes from 2026, the government hopes to accelerate the transition. From 2026, homeowners of existing homes must install a hybrid heat pump or another sustainable alternative as soon as the central heating system needs to be replaced. From 2023, every new-build house is required to be equipped with a heat pump. But the growth in demand for heat pumps is not only attributable to the sustainability measures in new construction. Existing homes are also increasingly fitted with a heat pump, with higher gas prices as a motivation for this.

Growth heat pumps versus new construction



Source: CBS, ABN AMRO Group Economics

Number of residential buildings without heat pumps



Source: CBS, ABN AMRO Group Economics

According to the National Heat Pump Trend Report 2023 (published by Warmte365 and Dutch New Energy Research), the number of installed heat pumps in 2022 is around 110,000. This is roughly in line with CBS figures, which recorded 107,298 new heat pumps (non-air conditioning) in homes. If we hypothetically assume that 110,000 remains the annual number of heat pumps installed (light green line in the right graph), then at that rate, all existing homes will not be fitted with a heat pump until 2076. This clearly shows that further upscaling in the sector is necessary.

The central government's 'Action plan for hybrid heat pumps 2022 to 2024' - in which bodies such as Netbeheer Nederland, Techniek Nederland, Vereniging Warmtepompen and Natuur & Milieu were involved in the compilation of the plan - provides a glimpse into heat pump ambitions. The plan shows that a scale-up of the current number of hybrid heat pumps should take place with 125,000 additional hybrid heat pumps in the period 2022 to 2024. Then, if this pace is maintained after 2024, the ultimate goal does come within reach. However, it will all not be as straightforward as shown in the graph on the right. For instance, the desired capacity will not simply be reached within a few years. Also, some market players have already questioned some of the action points in the plan, especially about feasibility in the short time frame. Therefore, it is better to take into account a range for achieving the target (see shaded area). At the point when all obstacles are removed early, the action plan and the transition goes relatively smoothly, then the target might be reached earlier than 2050. However, the likelihood of this seems small, especially given the major challenges for which there is no good solution yet at present.

Obstacles in scaling up

Installing heat pumps can be a good step towards carbon neutrality of the built environment. What is important here is that heat pumps are powered by renewable energy sources. This means that investments in heat pumps and renewable energy sources should accelerate in the coming years. For now, however, it looks like it will take some time before a truly large scale is reached. The sector is already at its limits. Demand is currently so high that waiting times are rising sharply.

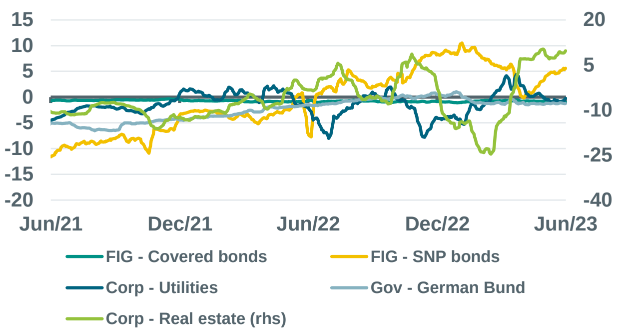
Underlying this is the severe lack of installers and limited production capacity. And in addition, network capacity is still lacking in many regions to serve a larger scale of heat pumps.

An important condition before investing in a heat pump is to take insulation measures in homes. After all, only energy-efficient homes make the deployment of a heat pump profitable. However, practical experience will likely also show that far from every home can achieve the necessary level of insulation at all, making a heat pump not a smart option. For those homes where it is possible, the journey starts with encouraging those homeowners to make their homes more energy efficient. This requires the necessary financial incentives. But delays and waiting times are also increasing in this sector. On balance, however, heat pumps will only be part of the low-carbon puzzle for the built environment. Many more efficiency measures are needed for carbon-neutral homes and to further reduce gas demand. In any case, it is clear that in many of these obstacles - such as the shortage of installers, limited network capacity and financial barriers - the government has a pre-eminent role to play in smoothing this transition.

ESG in figures

ABN AMRO Secondary Greenium Indicator

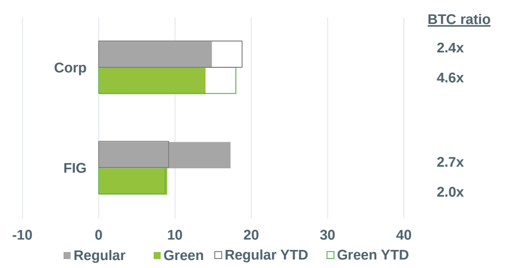
Delta (green I-spread – regular I-spread)



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

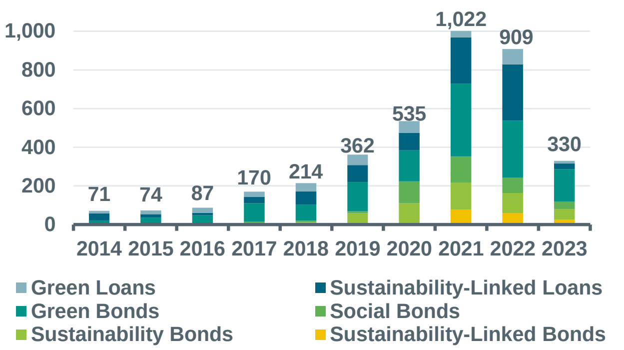
NIP in bps



Note: Data until 02-06-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

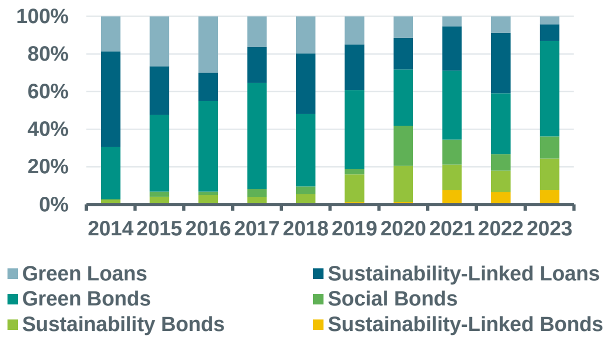
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

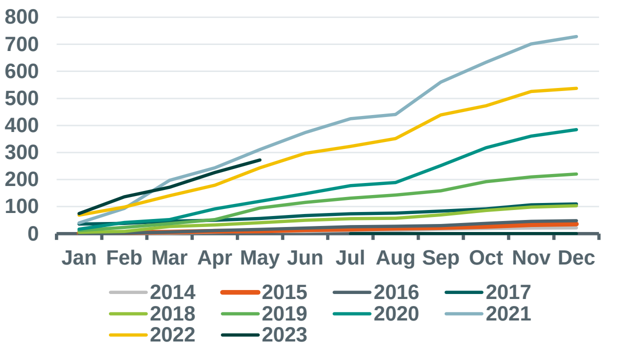
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

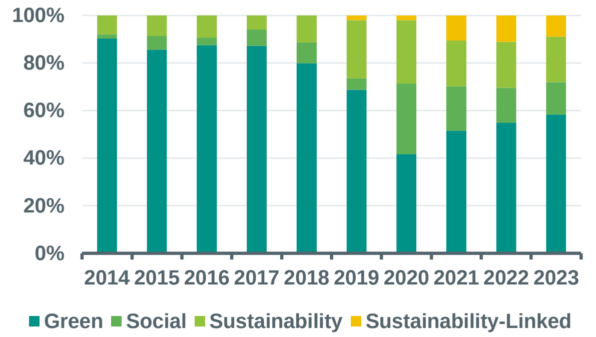
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

% of total

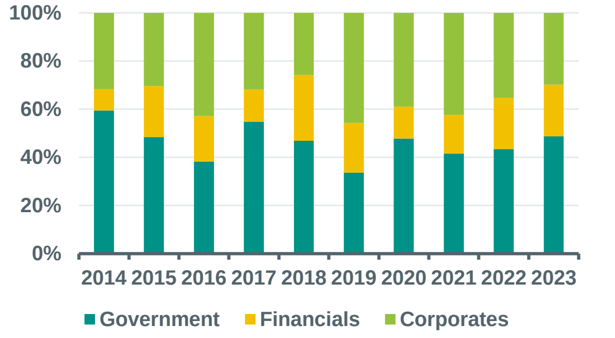


Source: Bloomberg, ABN AMRO Group Economics

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

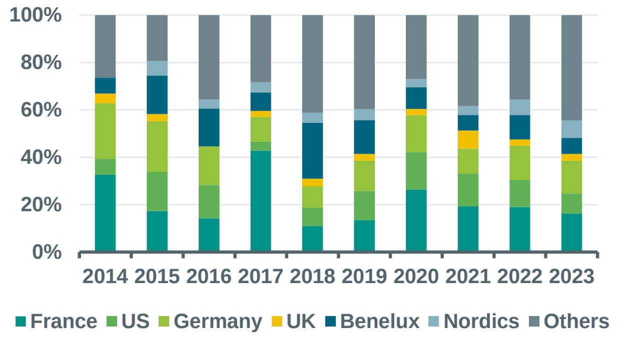
% of total



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country

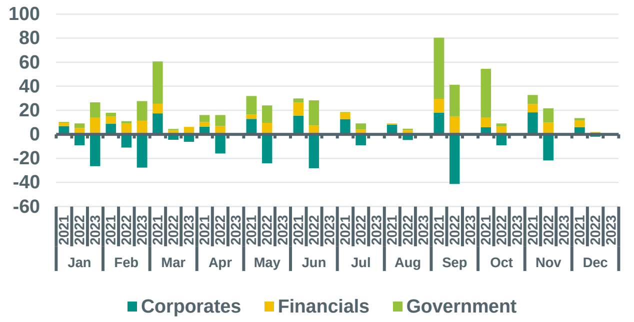
% of total



Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector

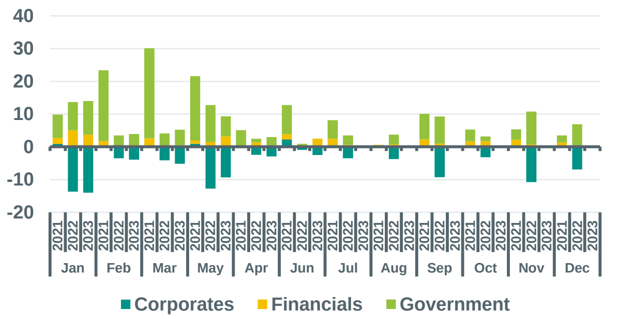
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector

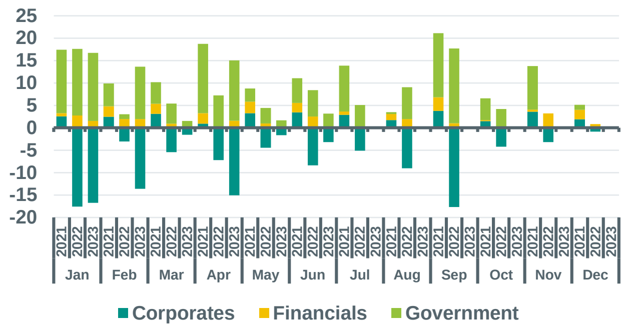
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Monthly Sustainability Bonds issuance by sector

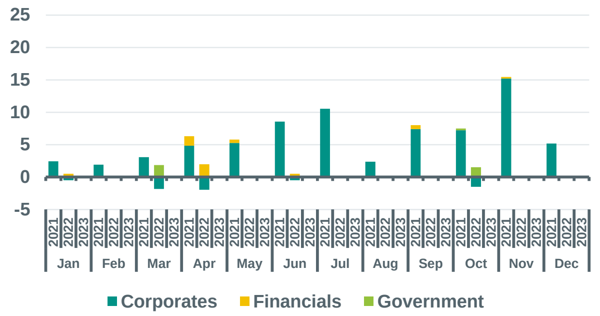
EUR bn



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.

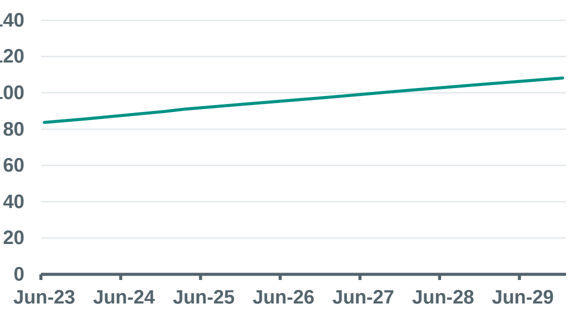
Carbon contract current prices (EU Allowance)

EUR/MT

Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)

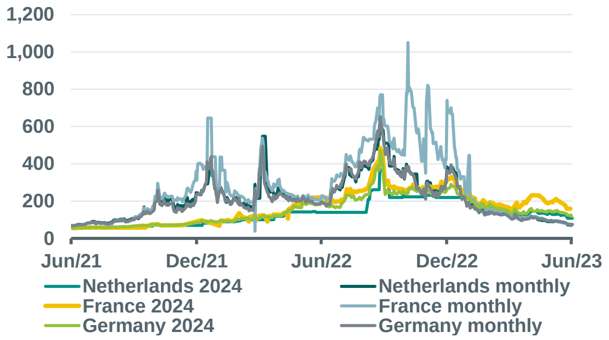
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

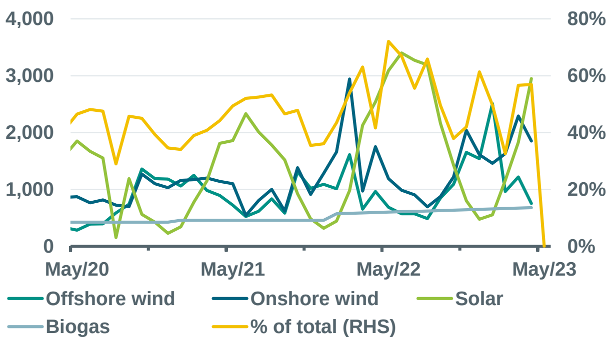
EUR/MWh



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

Electricity generation from renewable sources (NL)

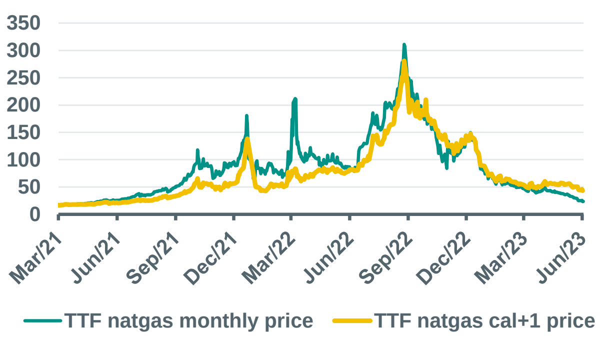
GW % of total



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

TTF Natgas prices

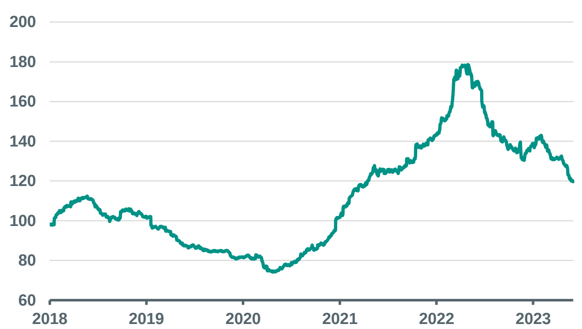
EUR/MWh



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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