SustainaWeekly

Will this COP be any different?

- **Economist: Going into COP28 the focus is on increased ambition and imminent progress towards the Paris Climate goals. Progress needs to be made in scaling down investment in high-emitting economic activities, increasing the pricing of emissions and scaling up investment in renewables, particularly in emerging and developing economies. More concrete steps are needed on the financial arrangements for loss and damage.**

- **Policy: Following the Dutch elections, a right-wing coalition is most likely. Based on the party programmes, it seems likely that climate ambitions will be watered down significantly. There is quite some overlap in the manifestos on stepping up nuclear power, continued use of natural gas and a slowdown of the renewable roll-out, while the PVV wants to scrap earlier agreed upon carbon reduction commitments completely.**

- **Sectors: A slower transition because of limited grid capacity is magnified by the mismatch in the timeframe for deploying grid extensions versus that needed for electrification or renewable deployments. Meanwhile, vulnerability to supply chain interruptions, inflationary pressures, and rising financing costs are some of the factors hurting the business case for renewables.**

- **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.**

The 28th Conference of Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC) kicks-off at the end of this month. In this week's SustainaWeekly, we preview the key issues that the conference needs to tackle, given that the world is not on track to meet the goals of the Paris Agreement. In our next note, we turn to the impact of the recent Dutch elections. We summarize the key climate and energy plans in the election manifestos of the parties that could form a right-wing coalition together with the PVV to assess the impact on climate policy. Our final note highlights the various obstacles facing investments in renewables. We shine a light on the potential implications of the combination of policies and bottlenecks and conclude with recommendations to solve these problems.

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

What to look out for at COP28

Anke Martens – Senior Climate Economist | anke.martens@nl.abnamro.com

- **Going into COP28 the focus is on increased ambition and imminent progress towards the Paris Climate goals**
- **Progress needs to be made in scaling down investment in high-emitting economic activities, increasing the pricing of emissions…**
- **… and scaling up renewables investment, particularly in emerging and developing economies**
- **More concrete steps are needed on the financial arrangements for loss and damage**

Introduction

COP28 is about to start. From 30 November until 12 December the 28th Conference of Parties (COP) to the UN Framework Convention on Climate Change (UNFCCC) will be held in Dubai, United Arab Emirates. The COP meets yearly to determine climate ambition and responsibilities, and identify and assess climate measures based on the Paris Agreement and the latest scientific findings. The EU and its members states are parties to the Convention, which counts 198 Parties (197 countries plus the EU). COP28 is a critical opportunity for countries to increase their ambition and action to close the emissions gap and align their policies with the 1.5°C target.

Taking stock

An important agenda point at COP28 will be the Global Stocktake. The Global Stocktake was agreed during the Paris agreement and is meant to take place every five years. The process implies looking at every issue related to where the world stands on climate action and support, identifying the gaps, and working together to chart a better course forward to accelerate climate action. It is intended to inform the next round of climate action plans under the Paris Agreement (nationally determined contributions/NDCs). By evaluating where the world stands when it comes to meeting the goals of the Paris Agreement and using its inputs, the Stocktake can help policymakers and stakeholders strengthen their climate policies and commitments in their next round of NDCs, paving the way for accelerated action.

Unfortunately, the answer to “where we stand currently” is very clear: although there has been significant progress since the Paris Agreement, the world as a whole is not doing enough to meet the 2030 goals. Globally extreme weather is already showing us the effects of the increasing temperatures. While meaningful progress has been made across some sectors, collective efforts to first peak and then nearly halve GHG emissions this decade still fall woefully short.

Observed data not moving in the right direction

Global GHG emissions increased by 1.2 per cent from 2021 to 2022 to reach a new record of 57.4 gigatons of CO2 equivalent (**UNEP Emissions Gap Report 2023**). All sectors apart from transport have fully rebounded from the drop in emissions induced by the COVID-19 pandemic and now exceed 2019 levels. CO2 emissions from fossil fuel combustion and industrial processes were the main contributors to the overall increase, accounting for about two thirds of current GHG emissions. Emissions of a number of other GHGs have also been increasing. Early indications are that carbon dioxide levels in 2023 will be at record levels. This is in stark contrast to the goal: in modelled pathways that limit global temperature rise to 1.5°C with no or limited overshoot, greenhouse gas (GHG) emissions peak immediately and by 2025 at the latest, and then decline by a median of 43 percent by 2030 and 60 percent by 2035, relative to 2019 (**State of Climate Action 2023**). Carbon dioxide (CO2) emissions, specifically, reach net zero by mid-century.

Limited progress was made in COP27

COP28 picks up where COP27, held in November 2022, left off. We concluded last year (**here**) that limited progress was made in the fields of the outlook for global warming and the important specific issue of climate finance for developing countries. While the ambitions were reiterated, there were some concrete commitments lacking. Examples mentioned by Alok Sharma, President of COP27, include no mention in the concluding text of peaking emissions of 2025; follow-through on the phase-down of coal; and the phasedown of fossil fuels generally. The outlook for global warming under different assumptions did not change significantly at COP27 compared to COP26. This reflects that there have been limited updates

of country's emission reduction plans (Nationally Determined Contributions, NDCs) in the run up to or during the climate summit.

Nine new or updated NDCs have been submitted since COP27

Since COP27 nine countries have submitted new or updated NDCs, bringing the total number of NDCs that have been updated since the initial NDCs were submitted in advance of or following the Paris Agreement to 149 (counting the EU's 27 member states as a single Party) as of 25 September 2023. Among others, the EU has adopted many elements of the Fit for 55 package and the REPowerEU plan over the past 12 months, including the expansion of the current EU Emissions Trading System (ETS), improvement in regulations and the carbon border adjustment mechanism. Still, increased investments in fossil gas infrastructure and a temporary shift from gas to coal pose a threat to the European Union's climate ambition, as do shifts in support for green parties towards right-wing climate-sceptic parties in the EU and its member states. More NDCs now contain GHG reduction targets, and more of these targets are economy-wide, covering a country's entire economy as opposed to certain sectors only. A total of 81% of global GHG emissions is currently covered by Net Zero pledges at some time this century, but not all inspire confidence in their implementation given their legal status, existence and quality of implementation plans, and the misalignment of ST emission trajectories with net zero targets.

According to the Emissions Gap Report, the current policies to reduce GHG emissions make the world likely to warm around 3°C by the end of this century. Delivering on all unconditional and conditional pledges by 2030 lowers this estimate to 2.5°C, with the additional fulfilment of all net-zero pledges bringing it to 2°C. Even in the most scenario the likelihood of limiting warming by 1.5°C is only 14%.

Global warming projections under the scenarios assessed

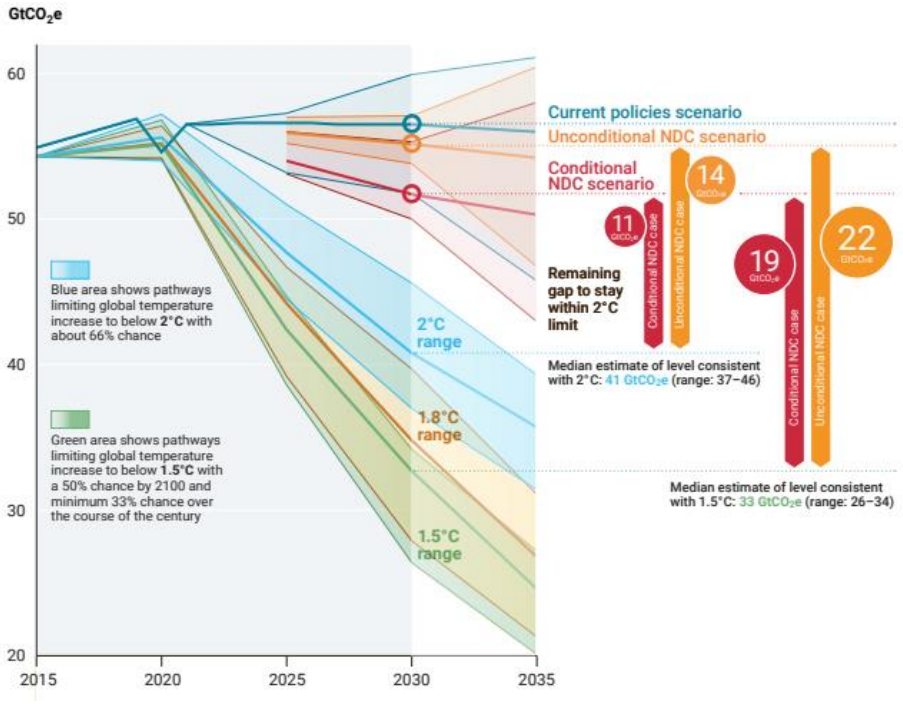
Peak warming throughout the twenty-first century (°C)			
Scenario	50% chance	66% chance	90% chance
Current policies continuing	2.7°C (range: 1.8–3.5)	**3.0°C** (range: 1.9–3.8)	3.5°C (range: 2.3–4.5)
Unconditional NDCs continuing	2.6°C (range: 1.8–3.4)	**2.9°C** (range: 2.0–3.7)	3.4°C (range: 2.3–4.4)
Conditional NDCs continuing	2.3°C (range: 1.7–3.3)	**2.5°C** (range: 1.9–3.6)	3.0°C (range: 2.2–4.2)
Unconditional NDCs and net-zero pledges using strict criteria	2.5°C (range: 1.8–3.2)	**2.7°C** (range: 1.9–3.5)	3.2°C (range: 2.3–4.1)
Conditional NDCs and all net-zero pledges (most optimistic case)	1.8°C (range: 1.6–2.3)	**2.0°C** (range: 1.8–2.5)	2.4°C (range: 2.0–3.0)
Likelihood of limiting warming to below a specific warming limit (%)			
Scenario	1.5°C	2°C	3°C
Current policies continuing	0% (range: 0–16)	4% (range: 0–73)	68% (range: 16–99)
Unconditional NDCs continuing	0% (range: 0–12)	6% (range: 0–69)	75% (range: 24–99)
Conditional NDCs continuing	0% (range: 0–20)	19% (range: 0–78)	90% (range: 30–100)
Unconditional NDCs and net-zero pledges using strict criteria	0% (range: 0–16)	11% (range: 0–74)	83% (range: 42–99)
Conditional NDCs and all net-zero pledges (most optimistic case)	14% (range: 1–27)	69% (range: 22–85)	99% (range: 89–100)

Source: Emissions Gap Report 2023. The range between brackets reflects the scenario uncertainty. The Emissions Gap Report typically presents the temperature projections with a 66% chance, other likelihoods are included for completeness

The Emissions Gap Report addresses emission gaps (the difference between the estimated global GHG emissions resulting from full implementation of the latest NDCs and those under least-cost pathways aligned with the long-term temperature goal of the Paris Agreement) and implementation gaps (the difference between projected emissions under current policies and projected emissions under full implementation of the NDCs). The implementation gap has been reduced significantly since last year, due to NDCs being implemented and becoming a concrete part of current policies of countries. However, the emissions gap in 2030 remains high: current unconditional NDCs imply a 14 GtCO2e gap for a 2°C goal and a 22

GtCO2e gap for the 1.5°C goal. An important question in this context, which we expanded on recently **here**, is how the remaining carbon budget should be allocated between high-income and low/middle income countries.

Emission pathways until 2035 under different scenarios



Source: Emissions Gap Report 2023

Investment in high-emission activities not phased down fast enough, and carbon pricing needs to be expanded

According to the **Climate Action Tracker** only one of the 42 indicators of sectoral climate action assessed – the share of electrical vehicles in passenger car sales – is on track to meet the 2030 target. For example, coal needs to be phased out of electricity generation seven times faster than recent rates, and the annual rate of deforestation – equivalent to 15 football fields per minute in 2022 - needs to be reduced four times faster. On the other hand, the report mentions spectacular gains "that have surprised even optimists", mainly in the field of building renewable energy capacity and falling prices of renewable energy. Renewable energy targets have been met or even exceeded in the EU and China, while in the USA the Inflation Reduction Act will provide more than $370bn over 10 years to projects that reduce GHG emissions and enhance carbon removal – even though there have been some recent headwinds in the form of, among others, increasing borrowing costs.

UNEP states that for the window to limit warming to 1.5°C to remain open, among other investments in high-emission activities need to be phased out. According to the IEA, investment in oil and gas currently is actually almost double the level required in the Net Zero Scenario in 2030, signalling a clear risk of protracted fossil fuel use that would put the 1.5 °C goal out of reach. While the clean energy economy is beginning to replace the fossil economy, this transition is not occurring rapidly enough. The war in Ukraine has caused oil and gas prices to spike, and in response fossil fuel consumption subsidies reached $1 trillion in 2022—the highest level ever.

Also, efforts to expand carbon pricing appear to have stalled. The price for emitting carbon in jurisdictions with pricing in place show only a slow increase and remain significantly below target levels: the target carbon price for 1.5°C of at least $170 per tonne of CO2 equivalent (in 2030) is not met in any place, while less than 5% of global emissions have carbon pricing at or above the $40-$80 range that is estimated to be consistent with a 2°C pathway. The average carbon price globally, weighted by share of emissions in territories covered by carbon pricing, was $23.23/tCO2e in 2023 and increased $2.35 per year on average between 2019 and 2023, which would, if continued, lead the price to fall far short of the target. At the same time, there has been no significant increase in the share of global GHG emissions which is covered since 2021.

Investment in renewables need to be stepped up in EMs particularly

Simply cutting spending on oil and gas will not get the world on track for a Net Zero scenario; the key to an orderly transition is to scale up investment in all aspects of a clean energy system. Investment in clean energy has risen by 40% since 2020, and the world is set to invest a record $1.8 trn in clean energy in 2023. Still, sources such as IEA, OECD and IPCC estimate this number needs to increase to $4-5trn annually during the transition to be in line with a net zero pathway. The sharpest jump in clean energy investment is needed in emerging markets and developing economies (other than China). Both public and private climate finance will need to increase to meet these goals, and stronger domestic policies together with enhanced and more effective international support. Public finance plays a pivotal role in supporting, creating and shaping markets, setting the right incentives, and mitigating some risks. Public finance is also important for ensuring equitable outcomes and a just transition, and ensuring access to finance for individuals and government who may not otherwise be able to raise the resources needed for the transition. Providing adequate financing for the poorest and most vulnerable communities, and making sure they have a say in how finance is used, is therefore imperative for ensuring an equitable and just transition.

More concrete steps on the financial arrangement for loss and damage

During COP27 a fund (and broader funding arrangements) was agreed to provide assistance to poor countries that suffered from climate disasters. The agreement to set up a fund was hailed as a ‘historic step’ because of the underlying (albeit not explicitly stated) principle that wealthier countries that have contributed most to climate change, should support poorer countries that suffer most from it. However, there were no details or concrete commitments following COP27. This fund needs more detail and more efforts to mobilise financing and strengthening of the existing funding arrangements, potentially with the participation of multilateral development banks and the international financial institutions.

Climate ambition set to weaken under a new Dutch government

Shanawaz Bhimji, CFA – Head of Corporate Bond Research | shanawaz.bhimji@nl.abnamro.com

- **Following the elections in the Netherlands, a PVV-led-right-wing coalition with VVD and NSC (81 seats) is most likely, possibly including the BBB**
- **Based on the climate and energy parts of the manifestos of the parties, it seems likely that, under such a coalition, climate ambitions will be watered down significantly**
- **There is quite some overlap in the manifestos on stepping up nuclear power, continued use of natural gas and a slowdown of the renewable roll-out, while the PVV wants to scrap earlier agreed upon carbon reduction commitments completely**

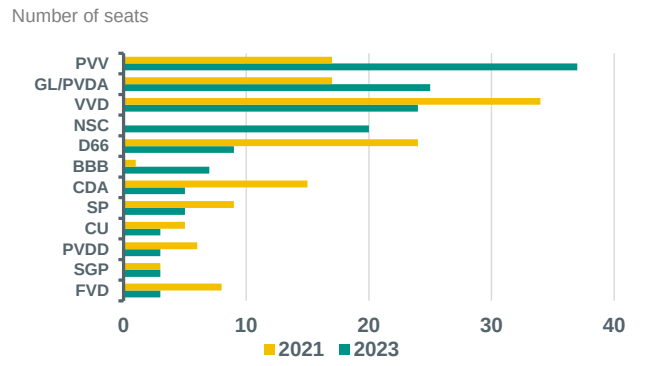
In the run-up to the elections, the currently largest governing party – VVD – was widely expected to become again the winner. As such, in terms of climate and energy policy, not that much change was expected. However, following the surprising win of the far-right PVV party, the outlook for climate policy could change significantly. We summarize the key climate & energy plans in the election manifestos of the parties that could form a right-wing coalition together with the PVV to assess the impact on climate policy. Before that, we briefly summarise the election results and possible coalition.

A right-wing coalition is most likely

The PVV – a far-right party with leader Geert Wilders – surprised in the Dutch elections by winning 37 out of the 150 seats. The three following parties are, respectively, GroenLinks/PvdA (green-labour) with 25 seats, VVD (liberal centre-right) with 24 seats, and new-comer NSC (centre-right) with 20 seats. Compared to previous elections D66 (progressive liberal), VVD and CDA (conservative), lost with 15, 10 and 10 seats respectively. The previous coalition consisting of VVD, D66, CDA and ChristenUnie lost 37 seats in total.

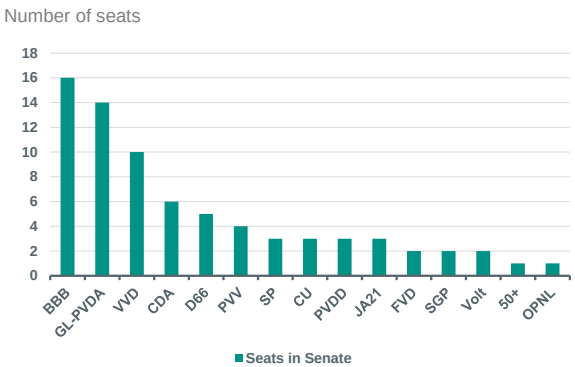
During the provincial elections in March, the new farmer movement – the BBB – won 16 seats in the senate (7 seats in yesterday's parliamentary elections). The other two largest parties in the senate are GroenLinks/PvdA with 14 seats and the VVD with 10 seats. In the senate, the PVV is relatively small with 4 seats. BBB's seize in the senate therefore increase the odds that they will be invited to join a future coalition government.

PVV wins 37 seats in parliament



Source: NOS, ABN AMRO Group Economics

BBB attractive partner with 16 seats in the senate



Source: Eerste Kamer, ABN AMRO Group Economics

For a majority in the parliament, 76 seats are required. Although various parties have been sceptical of forming a coalition together with the PVV, Wilders will have to look at two of the other three large parties: GroenLinks/PvdA, VVD, and NSC. Based on comments and ideological differences, GroenLinks/PvdA is ruled out which makes a right-wing coalition with VVD and NSC (81 seats) most likely. If you add BBB to this picture – which is attractive due to the position in the senate – the coalition would have 88 seats. However, in the senate this coalition would have 30 seats which is below the required majority of 38 seats. This would limit the coalition's policy ambitions.

As the PVV was the clear winner of the elections, the initiative for the formation process is with them, which in itself could speed up the process. Still as NSC and VVD have expressed concerns regarding some aspects of the PVV party programme, a complicated negotiation process might still happen. Indeed, VVD has recently suggested that it would not join any future cabinet, but rather support the coalition as a sleeping partner. In any case, 2024 will be well under way before a new cabinet will be installed.

What do the manifestos tell us about future climate policy?

To assess what climate policy would look like under such a coalition government, below we summarise the main points from the policy programmes published before the elections.

Partij van Vrijheid (PVV)

The current Climate Law, which today has committed the Netherlands to reduce carbon emission by 55% in 2030 and become carbon neutral by 2050 plus has specific roadmaps for sectors and set aside financial means and subsidies for the energy transition, should be scrapped according to the PVV. On the renewable generation side, there should be no room for additional large scale wind and solar power development. There should be a swift roll-out of nuclear power, while coal and gas-powered electricity plants should remain open. Residential buildings should continue to be able to rely on natural gas for heating, with no mandatory switch to heat-pumps. To secure natural gas, the country should strike long-term LNG deals & stimulate further exploration of gas in the North Sea.

Volkspartij Vrijheid en Democratie (VVD)

The VVD actually agrees with the PVV with regards to nuclear power and drilling new wells in the North Sea for gas security. It did not explicitly mention closing coal fired power plants, suggesting that this could be open for discussion. This would then be difficult to reconcile with continuing with the agreed climate plan, which also includes a CO2 tax for (heavy) fossil fuel users. Four new nuclear plants should be built and several modular ones as well. Meanwhile, off-shore wind should be continuously stimulated. Finally, the VVD would like to prioritize insulation of the built environment (homes), for which it is willing to provide subsidies.

Nieuw Sociaal Contract (NSC)

NSC, like the PVV and VVD, is also a fan of nuclear power but limits the newbuild to 2 reactors, next to extending the existing operation at Borselle. On LNG contracts and North Sea exploration, it shares the same views as the PVV. Like the VVD, NSC also still favours wind power, but it is no fan of having further on-shore development of renewables. NSC also favours scrapping the financial component in the Dutch Climate Law, called ‘Klimaatfonds’, worth EUR 35bn.

Boeren Burger Beweging (BBB)

The BBB has similar proposals to the PVV/VVD/NSC, except that it wishes to continue the financial component in the Climate Law and prefers to use farming as a way to generate renewable energy (such as biogas being produced as by product) or as way of carbon storage (redirect industrial CO2 to greenhouses for vegetables). Also renewables on land, especially on farming land, are discouraged and Dutch ambitions on climate should be regularly benchmarked against peers to ensure a fair level playing field.

Climate and energy policy set to change in the Netherlands

It seems that the earmarked coalition partners have quite some overlap in their energy and climate policy agendas. Especially in the area of nuclear power, continued use of natural gas (and maybe even coal) and a slowdown or halting renewable energy development. A ramp-up of nuclear power will take time, which then obviously means that without a commensurate ramp-up in renewables the Netherlands will continue to rely on fossil fuels for heating and power. The main disagreement is that while NSC and VVD would like to stick to earlier agreed carbon reduction targets enshrined in the Climate Law, while the larger PVV is a seriously against this. It seems like the Netherlands will take a different direction in tackling the energy transition. Overall, climate ambition seems set to weaken under a new Dutch government.

What is hindering the energy transition?

Moutaz Altaghlibi – Energy Economist, Sustainability | moutaz.altaghlibi@nl.abnamro.com

- **The transition is an economy wide process where a development in one part affects, directly or indirectly, other parts**
- **A slower transition because of limited grid capacity is magnified by the mismatch in the timeframe for deploying grid extensions versus that needed for electrification or renewable deployments**
- **Vulnerability to supply chain interruptions, inflationary pressures, and rising financing costs are some of the factors hurting the business case for renewables**
- **The impact of limited infrastructural capacity could induce transboundary effects by limiting the transition across borders**
- **Managing and coordinating the speed of the transition across different channels is crucial for avoiding unnecessary delays or weakening the incentives for clean technologies investments**
- **Authorities have an essential role in mitigating the effect of bottlenecks or any adverse change in the business environment**

Introduction

A transition is, by definition, a dynamic process that needs time to materialize. However, given the climate action urgency, time becomes a key factor for a successful energy transition. The literature around the energy transition emphasizes the need to have the right policies, which deliver incentives to different market participants to boost investments in clean technologies and achieve emission reductions and climate goals. However, markets need time to adjust and reallocate resources and investments. Time that we do not have. Moreover, there is an underestimation of delays that are caused by the emergence of bottlenecks or unexpected shocks, which risks countries not reaching climate goals in a timely and orderly manner. This note highlights different obstacles facing investments in renewables. We shine a light on the potential implications of the combination of policies and bottlenecks and conclude with recommendations to solve these problems.

The effect of bottlenecks

The transition is an economy wide process where a development in one part affects, directly or indirectly, other parts. Accordingly, any evolving sectoral bottlenecks do not only affect the transition in the associated sector, but rather passthrough to other sectors as well.

Limited grid capacity

One of the prominent bottlenecks for the energy transition is the limited grid capacity, which does not only put limits on the expansion and roll out of renewables, but also discourages or postpones the electrification process. More precisely, the business case for wind and utility solar power relies on the possibility to connect these projects to the electricity grid. Meaning that in the absence of suitable grid capacity, renewable investments are not happening. Similarly, in the absence of cheap renewable energy, electrification is halted or postponed. Furthermore, projects on alternative fuels that depend on renewables as a main input, such as green hydrogen, are also put on hold, affecting in consequence, the transition of hard to abate industries that do not have other alternative clean technology but green hydrogen.

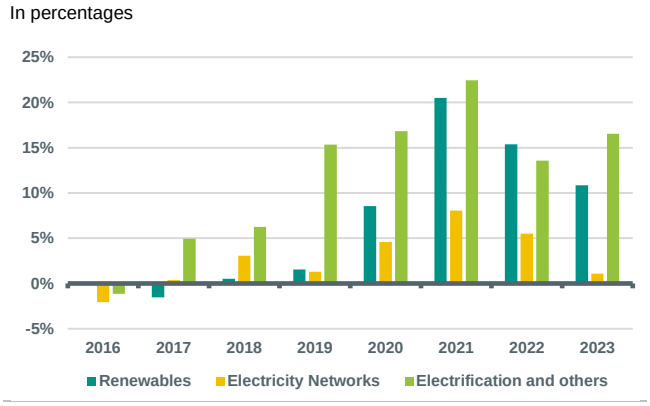
For wind power, there are queues of applications to connect to the grid networks, which along with an already strained grid, is limiting the possibilities to link to the transmission network for new renewable projects. This issue has float to the surface in many countries such that the US, the Netherlands, and the UK[1].

For solar power, the energy crisis was a big catalyst to investments in distributed solar PV. This was most visible in the drastic increase in the solar investments last year. However, the deployment of distributed solar PV at a fast rate with the absence of grid capacity and grid level storage, translate into blackouts and negative prices, which decrease the incentives to invest.

[1] In the United Kingdom, there are 371 GW of subscribed projects for grid connection, of which only 111-148 are expected to be connected (More here).

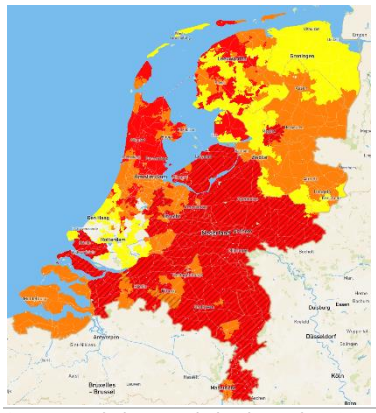
In large parts of the Netherlands the electricity grid is so full that there will be the coming years, no new major consumers such as companies can be established, until the reinforcements of the electricity grid are ready or more flexible use is made from the net. This issue is demonstrated in the right hand chart in the figure below which depicts the regional grid capacity for new connections in the Netherlands.

Growth in European investments in clean technologies



Source: IEA, ABN AMRO Group Economics

Dutch regional grid capacity



Source: Netbeheer Nederland. Version: 09-11-2023. Legend: Transparent: transport capacity available; Yellow: limited transport capacity available; Orange: no transport capacity available for the time being pending the outcome of the congestion management study; Red: no transport capacity available and congestion management cannot be applied.

In general, limited grid capacity is associated with long permitting and planning times and an old grid network. Additionally, the grid expansion process is complex, which involves many stakeholders (public and private) on a national and regional level, and requires therefore 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. That is, 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.

Rising costs and supply chain interruptions

Other issues that undermine the business case for clean technologies, is the access and cost of finance. The current high interest rate environment is increasing the cost of renewable projects and reducing their feasibility. There is a vicious cycle where the profitability of large renewable projects relies on affordable finance, while access to this kind finance relies on the profitability of these projects. This issue is becoming more and more visible in the offshore wind industry and even for distributed solar PV, where higher borrowing costs has its impact on the affordability of solar PV for small consumers, while, at the same time, many offshore wind companies have been falling back on projects citing higher interest rate as one of the main factors. Moreover, incentives in a form of savings on energy bills that were triggered by higher electricity prices have decreased as well, weakening the adoption rate of solar PV.

Furthermore, supply chain bottlenecks and interruptions also represent a major reason for delays for projects and trigger a fallback in renewable investments. For example, the dependency of renewable technologies on the critical minerals makes them vulnerable to the tight supply or any shock affecting the markets of these materials. In addition, the scarcity of skilled labour could also be a limiting factor for timely investments. In the considerable sustainability efforts that need to be made, professionals for the energy transition are essential but unfortunately hard to find. In the Netherlands, labour market shortages are substantial in general, but for occupation in the energy transition related activities they are even greater (**link**).This adds to inflationary pressures on different inputs for renewables, which pushed these investments into out of the money territory.

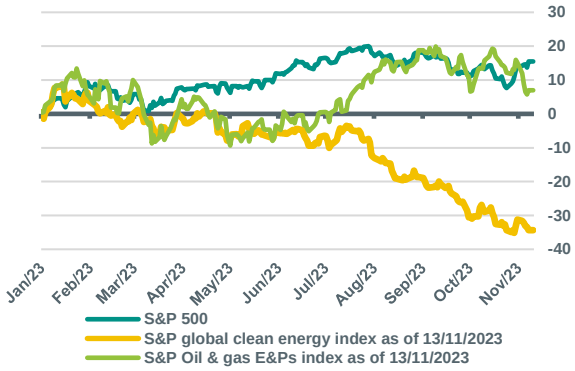
Primary risks associated to key clean technologies

	Wind	Solar PV	Nuclear	Battery storage	Demand response	Grids	Electric vehicles	Heat pumps
Regulatory and policy risks								
Regulatory frameworks	Medium	Low	Medium	Medium	High	Medium	Medium	Medium
Policy support	Low	Low	Medium	Low	High	Low	Low	Low
Permitting and certification	Medium	Medium	High	Low	Low	High	Medium	Low
Supply chain risks								
Critical minerals	High	Medium	Low	High	Low	Medium	High	Low
Manufacturing	High	Low	Medium	Medium	Low	Low	Low	Medium
Skilled labour	Medium	Medium	High	Low	Low	High	Low	Medium
Financial risks								
Costs of financing	High	Medium	High	Medium	Low	High	Medium	Medium
Revenue and savings predictability	Medium	Low	Low	Medium	Medium	Low	Low	Low
Overall risks	High	Low	Medium	Medium	Medium	High	Low	Medium

Source: IEA

Poor profitability for renewables companies

Index percentage change compared to 3/1/2023 value



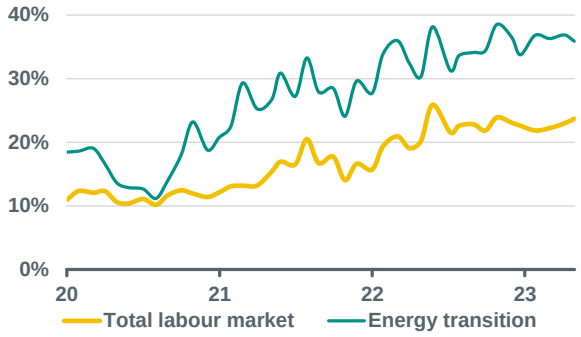
Source: Bloomberg, ABN AMRO Group Economics

These issues are starting to leave their mark on the profitability of clean energy companies as seen in the right hand chart in the figure above. For example, in the UK, October 2023 auction for offshore wind farm received no bids mainly because the strike price for the Contract For Difference (CFD) did not take into account the increase in inflationary pressures on the production cost. The government was slow to account for these industry-wide cost development issues which made the CFD levels well below what is needed to make projects profitable.

Shortages in the labour market

Labour market is tight for the energy transition

% unfillable vacancies



Source: ABN AMRO labour market indicator

Other factors are arising as headwinds for investments in renewable energy, undermining its business case. For example, the scarcity of skilled labour could also be a limiting factor for timely investments. In the considerable sustainability efforts that need to be made, professionals for the energy transition are essential but unfortunately hard to find. For instance, in the Netherlands, labour market shortages are substantial in general, but for occupation in the energy transition related activities they are even greater as seen in the figure above (link).

Transitioning too fast

Managing the speed of the transition across different channels is also crucial for avoiding unnecessary delays or weakening the incentives to invest in clean technologies. For example, higher share of renewables that produce simultaneously increase the frequency of negative prices and reduces the capture rate[2], and in consequence, reduces the return on investment and the incentives to invest. Issues such as these could be tackled through investments in batteries or green

[2] The capture rate is the portion of the price paid back to producers.

hydrogen, for example, which also exemplifies how the energy transition should be tackled as a whole rather than focusing on individual technologies.

Potential spill-overs

The impact of limited infrastructural capacity does not only affect the transition domestically, but it could limit the transition across borders. For example, the limited grid capacity would put limits to the transmission and trade of renewable electricity across borders. Also, lack of charging stations for electric vehicles between countries could delay investments in the electrification of the transport sector. The problem of limited grid capacity and its effect on the transition is already starting to come to the surface for many European countries such as the Netherlands and Germany.

In addition, we should also look at the aforementioned problems in light of different transition policies. Carbon pricing's main function is to incentivize the transition towards low carbon technologies. Bottlenecks adversely affect the efficient functioning of carbon pricing. For example, in Europe the EU-ETS is the flagship policy to reduce European emissions in key emitting sectors. EU-ETS is a cap and trade system, where a cap on emissions is set to decrease over time with a yearly linear reduction factor (now set at 4.2%) inducing an increase in the price of emission allowances that in turn incentives industries to adopt clean technologies. However, a bottleneck blocking the transition in industries while carbon prices keep rising would incorporate additional costs to companies, where the competitiveness of these companies deteriorate with no possibility to switch to clean alternatives. The latter impact could lead to bankruptcies and even trigger a transition related crisis or so-called a disorderly transition.

Recommendations on possible remedies

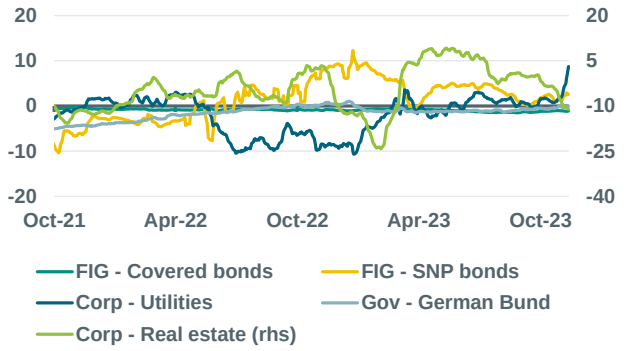
Even with a support in place, in terms of subsidies, as long as bottlenecks exists, transition will not go forward. Authorities have an essential role in managing the transition and mitigate the effect of bottlenecks or any adverse change in the business environment. For instance, the EU authorities should keep the emission allowance (EUA) price in check by the usage of Market Stability Reserve until bottlenecks are resolved or an emerging shock has elapsed. Also, a timely update for policy levels, such as the strike price of CFD, given the sector and industry developments is essential to avoid unnecessary delays and associated additional costs. Moreover, reforms are needed to facilitate the extensions of limited grid capacity as soon as possible. For example, auction redesigns, the easing of licencing procedure, and enforcing shorter deadlines for permitting applications on national and European levels. Moreover, a proactive approach should be adopted by authorities to revaluate and investigate any potential bottlenecks that could emerge along the transition process in advance. For instance, revisiting current regulation from the transition perspective in order to identify any regulatory barriers that could hinder the deployment of clean technologies, either directly or indirectly by impeding potential business cases that could be pursued in a more supportive or effective regulatory environment. Additionally, tailored training and reskilling programs aimed for workers in weakened industries should be further developed to help meeting rising the demand from transition needed industries.

This note is part of a more extended publication which is forthcoming.

ESG in figures

ABN AMRO Secondary Greenium Indicator

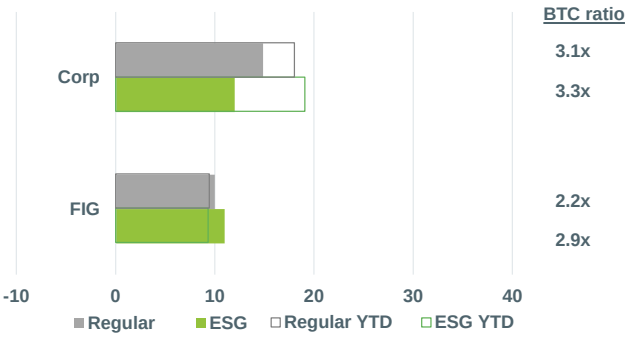
Delta (green I-spread – regular I-spread)



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

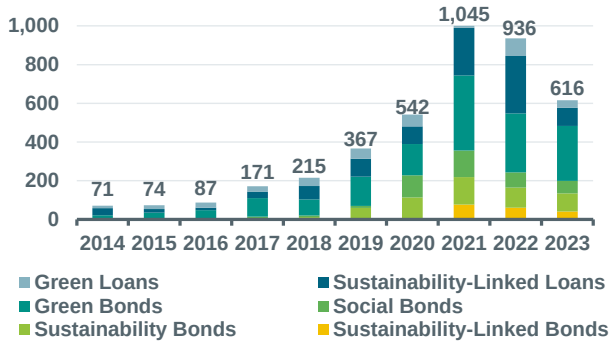
NIP in bps



Note: Data until 23-11-23. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics

Sustainable debt market overview

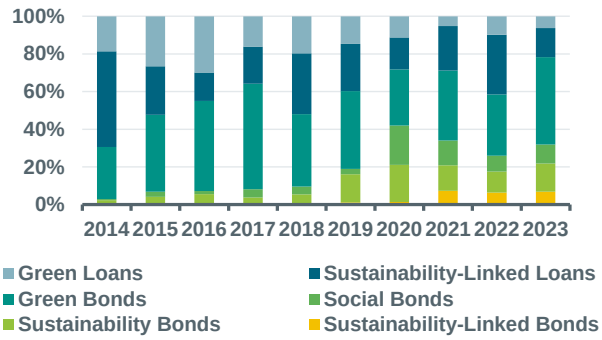
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

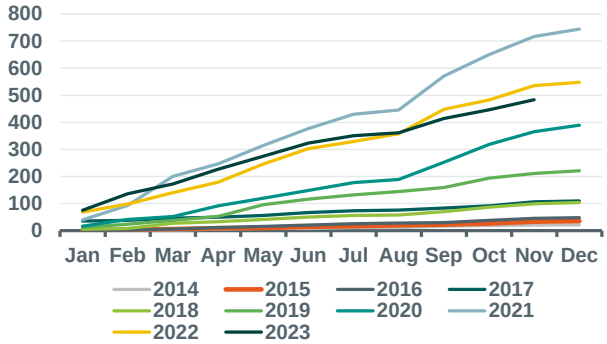
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

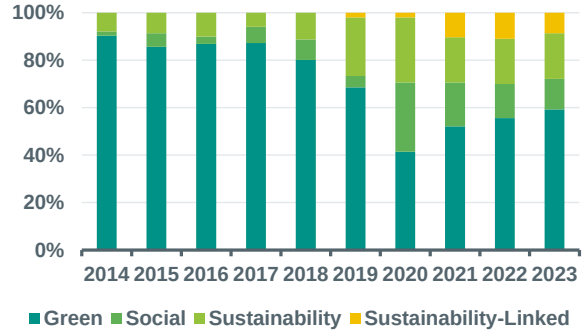
EUR bn (cumulative)



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

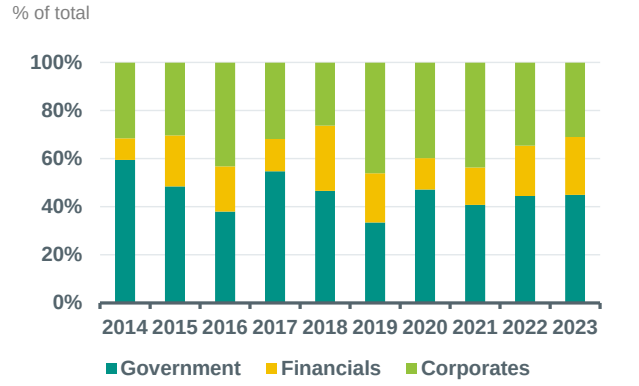
% of total



Source: Bloomberg, ABN AMRO Group Economics

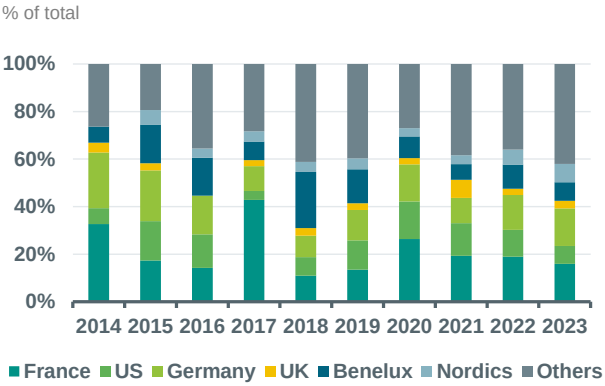
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Breakdown of ESG bond issuance by sector



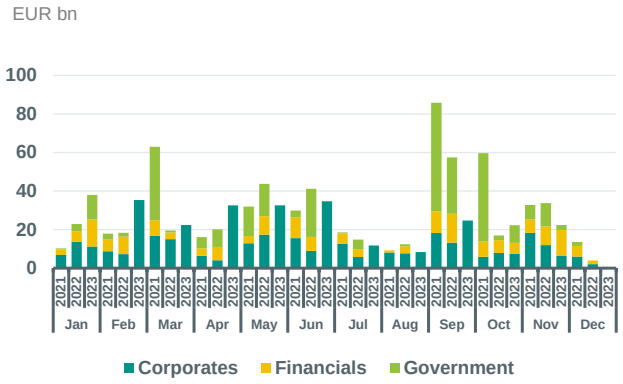
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country



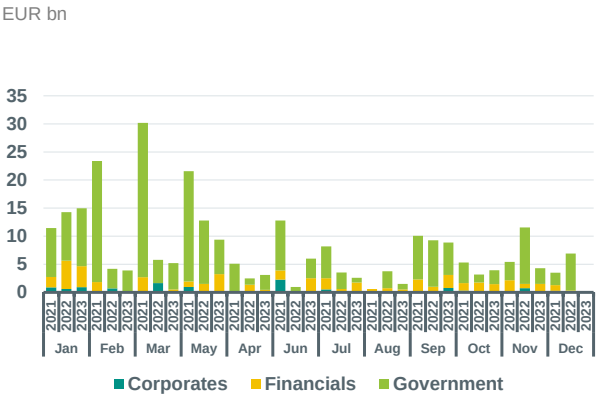
Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector



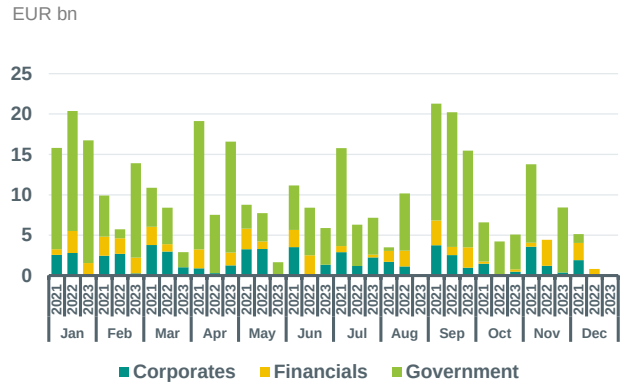
Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector



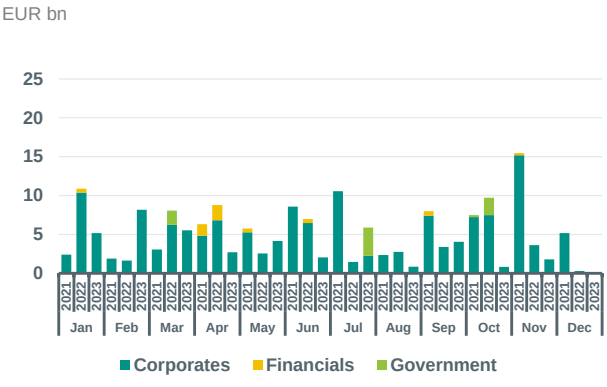
Source: Bloomberg, ABN AMRO Group Economics

Monthly Sustainability Bonds issuance by sector



Source: Bloomberg, ABN AMRO Group Economics

Monthly Sust.-Linked Bonds issuance by sector



Source: Bloomberg, ABN AMRO Group Economics

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

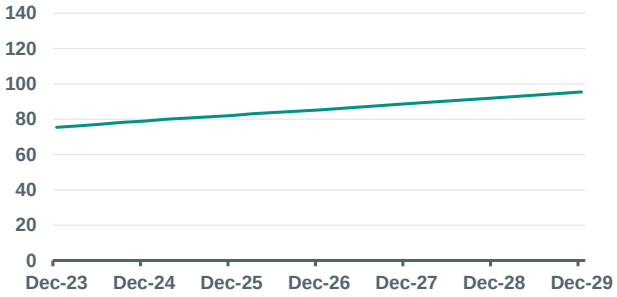
Carbon contract current prices (EU Allowance)

EUR/MT

Source: Bloomberg, ABN AMRO Group Economics

Carbon contract futures curve (EU Allowance)

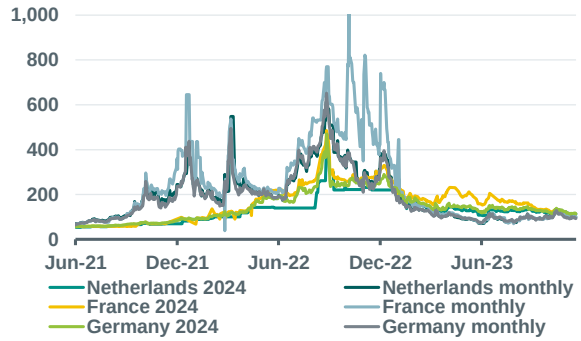
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

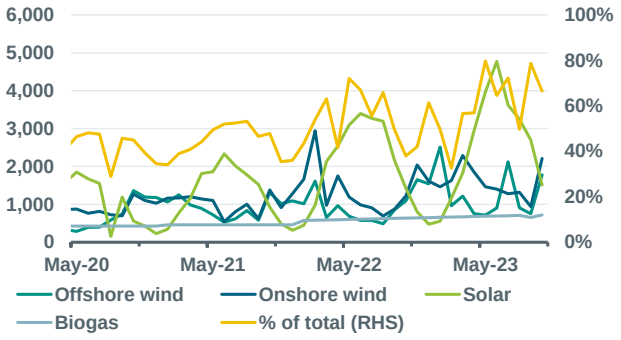
EUR/MWh



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

Electricity generation from renewable sources (NL)

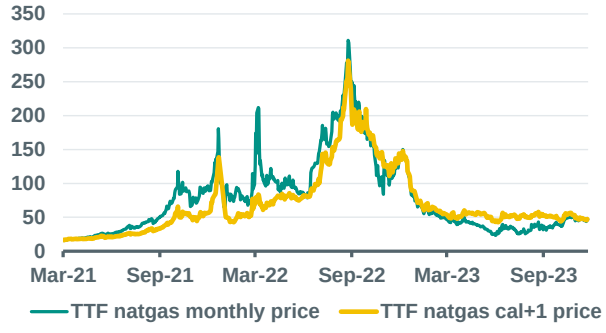
GW % of total



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

TTF Natgas prices

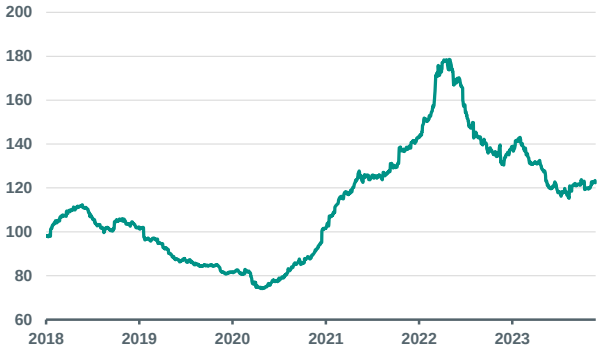
EUR/MWh



Source: Bloomberg, ABN AMRO Group Economics

Transition Commodities Price Index

Index (Jan. 2018=100)



Note: Average price trend of 'transition' commodities, such as: corn, sugar, aluminium, copper, nickel, zinc, cobalt, lead, lithium, manganese, gallium, indium, tellurium, steel, steel scrap, chromium, vanadium, molybdenum, silver and titanium. Source: Refinitiv, ABN AMRO Group Economics

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

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