SustainaWeekly

Still far from Net Zero as we enter COP27

- **Economist: With COP27 kicking off, we take a look at how far the world is from a Net Zero scenario. The gap to Net Zero in terms of pledges and targets is becoming noticeably less. However, there remains a large gap between ambitions and policy implementation. A very significant step up of policies is needed to get to a below 2°C scenario.**

- **Sectors: Investment in renewable energy needs to triple by 2030. Many governments have already stepped up plans to boost these investments, but emerging and developing countries are lagging seriously behind. Financial support for developing economies will be on the agenda again at COP27.**

- **Banks: The ECB published its thematic review on the management of climate-related and environmental risks by financial institutions. Even though 85% of banks have in place some basic practices, there are still large blind spots, reducing the effectiveness of climate-related risk management. Firm deadlines set for end 2024, with some intermediate targets as well.**

- **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.**

With COP27 kicking off, we take a look at where the world is in terms of the pathway to a Net Zero scenario in this SustainaWeekly. The evidence suggests that the gap between government's targets and ambitions and a Net Zero scenario has becoming noticeably less over the last year or so, though there remains a very large gap between ambitions and policies. It is clear is that a very significant step up of policies is needed to get to a below 2°C scenario, while still more ambition and policy implementation is necessary to get to a 1.5°C scenario. We go on to review the IEA's latest estimates for needed investment in clean energy under a Net Zero scenario. Though all countries need to step up significantly from current levels, the gap is largest for emerging and developing economies, outside of China. Finally, we set out some of the key conclusions from the ECB's thematic review on climate-related and environmental risk management by financial institutions.

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

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Still a distance to Net Zero

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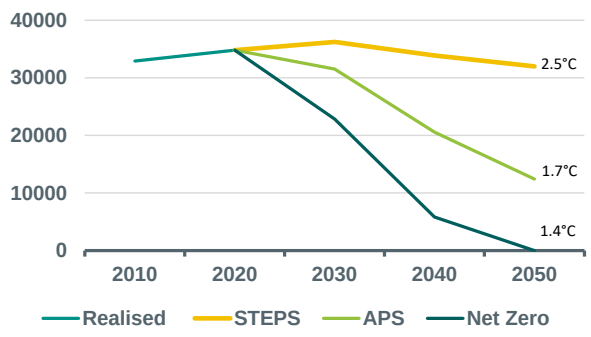
- **With COP27 kicking off, we take a look at how far the world is from a Net Zero scenario**
- **The gap to Net Zero in terms of pledges and targets is becoming noticeably less**
- **However, there remains a large gap between ambitions and policy implementation**

With COP27 having kicked off yesterday (6-12 November), we take a look at where the world is in terms of the pathway to a Net Zero scenario that would limit global warming to 1.5 degrees compared to pre-industrial levels. The evidence suggests that the gap between government's targets and ambitions and a Net Zero scenario has becoming noticeably less over the last year or so, though there remains a very large gap between ambitions and policies.

IEA pathways for emissions and warming

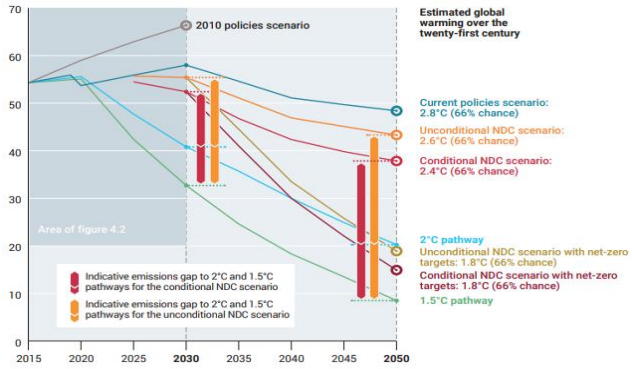
CO2, Mt; temperature rises by 2100



Source: IEA, ABN AMRO Group Economics

UN pathways for emissions and warming

GtCO2e



Source: UN

Gap between ambitions and Net Zero is closing

In judging where the global economy is heading in terms of emissions and global warming, the IEA's World Energy Outlook (see here) is a good place to start. We have set out the pathways for emissions and warming in the chart above on the left. Under the Announced Pledges Scenario (APS), which takes account of all the commitments made by governments as well as longer term net zero emissions targets, emissions are projected to fall sharply in the coming decades. This would lead a median global average surface temperature rise of around 1.7 °C by 2100. This indicates that the gap between government's ambitions and a Net Zero scenario is closing. The IEA notes that this reflects new targets and pledges that have been made over the last year, the most significant of which was India's announcement of a 2070 net zero emissions target.

Still a large gap between ambitions and policies

While ambitions have been stepped up, policies are lagging behind those ambitions. Under the IEA's Stated Policies Scenario (STEPS) – which takes into account existing policies and measures and those that are under development – emissions would be flattish over the next years, before falling more slowly in the decades after 2030. This would lead a median global average surface temperature rise of around 2.5 °C by 2100. The so-called 'implementation gap' would need to be closed for the emission reduction set out under the APS to be achieved.

UN paints a more gloomy picture of both ambitions and policies

The UN also published its Emissions Gap report recently (see here), which paints a more negative picture. However, some of the differences are related to the specific assumptions behind the scenarios, as well as some technical differences. Under the UN's current policies scenario (see chart on the right above), it estimates global warming at around 2.8°C by the end of the century. This is higher than the IEA's estimate, but this looks to be mostly presentational, as the UN presents its numbers as a 66% chance rather than a 50% chance. Meanwhile, the UN notes that current Nationally determined

contributions (NDCs) imply a temperature warming of 2.4-2.6°C by 2100, for conditional and unconditional pledges, respectively. Again this seems higher than the IEA's estimate based on pledges, but it excludes net zero targets. Once NDCs are supplemented with net zero targets, the UN's estimates do converge towards the IEA's APS scenario, with warming seen at 1.8°C and are exactly the same on the basis of a 50% chance.

Overall then, it depends whether one takes a glass is half full or half empty approach. However, what is clear is that a very significant step up of policies is needed to get to a below 2°C scenario, while still more ambition and policy implementation is necessary to get to a 1.5°C scenario. In addition, there is a lot of uncertainty about potential outcomes if governments do not go further than current policies. Indeed, under current policies there is a non-negligible chance that the temperature rise could significantly exceed 3°C.

Topics at COP27

Egypt's COP27 presidency has stated that this year's conference will be about moving from negotiations, and 'planning for implementation' of the promises and pledges already made. To this end, it has identified a range of topics focused on enhancing implementation as well as raising ambition on broad range of issues related to climate change. As usual a key area of focus is whether countries step up mitigation ambitions, especially in terms of 2030 emission targets. The UN notes that while at COP26 countries agreed to deliver stronger commitments this year, only 23 out of 193 countries have submitted their plans to the UN so far. Meanwhile, many stakeholders are calling for greater levels of funding to help poorer countries adapt to the climate consequences of global warming, while financial support for mitigation efforts will remain on the agenda as well (see note on investment needs later in this publication for more). Although not officially on the agenda, the topic of 'loss and damage' is grabbing attention. In particular, many developing countries - that are often most impacted from natural disasters made more frequent and intense by global warming – argue they should receive financial compensation. The negotiations will also include technical discussions on emission measurement.

Investments in renewable energy sources to triple in 2030

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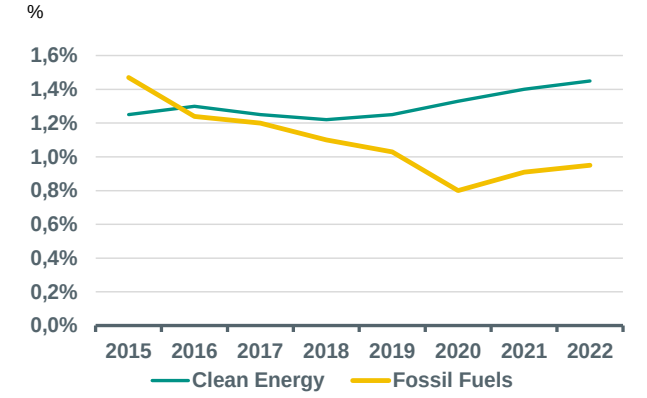
- **The World Energy Outlook of the IEA indicates that investment in renewable energy needs to triple**
- **Many governments have already stepped up plans to boost these investments**
- **There is a huge difference in investments in clean energy between advanced economies and China versus emerging and developing countries**
- **Focus shifts towards COP27 where the financial support for developing economies will be on the agenda again**

The current situation of high energy prices, in combination with the wish to lower Europe's dependence on Russian energy imports, will trigger an acceleration of investments in renewable energy sources in Europe. This trend is confirmed in the latest World Energy Outlook (WEO 2022) of the International Energy Agency (IEA). At the same time, as stated in the DNV Energy Transition Outlook 2022, the high energy prices may dampen investment in clean energy in other regions like emerging and developing economies. DNV indicates that the high prices of energy (and food) have shifted the attention in low and middle income countries to short-term priorities. As a result, a short-term resurgence of coal is already noted and long term investments in renewable energy and electricity infrastructure are likely to be postponed. As a result, there is a trend in investments in Europe compared to other regions. However, the net effect is relatively low in the near term. At the same time, the acceleration of the investments in Europe will also pave the pathway for the transition in other regions at a later stage.

Investments in renewables need to be scaled up… significantly

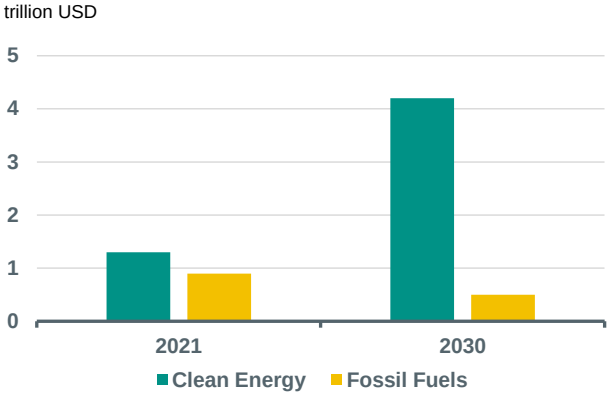
The WEO 2022 confirms the analysis done in the DNV report. Investments in renewable energy needs to be scaled up significantly. Both the IEA and DNV indicate that investments in renewable energy need to triple and grid investments need to rise by over 50% up to 2030. The IEA makes it clear that 'the world has not been investing enough in energy in recent years, a fact that left the energy system much more vulnerable to the sort of shocks seen in 2022'. This is something that the IEA has stressed already several times in recent years. Investments in oil and gas have been cut significantly in recent years and are roughly trending towards a Net Zero 2050 scenario. However, to compensate for this drop in investments in oil and gas – leading to pressure on supply in the coming years – more investments should have been done in renewable energy sources. In fact, this discrepancy between lower investments in oil and gas, without the acceleration to clean energy investments presented a risk to market balances in recent and coming years.

Investment as a share of GDP



Source: IEA

Growth in renewables needs to accelerate



Source: IEA

The IEA indicated that investments in renewables should be 3-3.5 times higher by 2030 to be in line with a Net Zero 2050 scenario and to compensate for lower oil and gas capacity whilst still meeting the demand requirements. This would bring investments in clean energy from almost 1.5% of global GDP towards nearly 4% by 2030 in the Net Zero Emissions

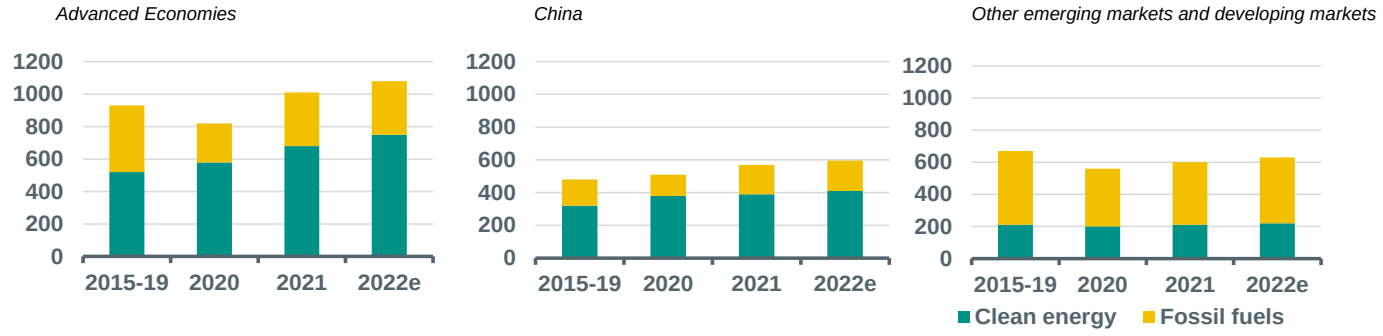
scenario. In the WEO, the IEA has increased its estimate of investment needs in renewables to over 4 trillion dollars per year globally whilst keeping the investments in oil and gas unchanged. This implicates that investments in renewables should grow to 9x the investments in oil and gas. The current ratio is roughly 1/1.5. Private sources should contribute around USD 3 billion to these investments, which is three times higher than recently has been the case.

According to the IEA, the rise of the share of renewable energy sources mainly relates to the drop in technology costs. However, the amount of investment into energy transitions had been flat at around USD 1 trillion per year since the Paris Climate Agreement. Only in 2020 and 2021 investments in clean energy had seen a notable increase.

Big differences advanced versus emerging and developed countries

In the recent years, investments in clean energy have been roughly similar in advanced economies and in emerging markets and developing economies (both roughly USD 1 trillion per year). However, where investments in advanced economies need to double in 2030, investments in emerging and developing countries even needs to rise more. Also in 2040 and 2050, the investments in emerging markets almost need to be double the investments in advanced economies when we look at the energy investment trends in the Net Zero Emission Scenario. The IEA showed in its World Energy Investment 2022 report that almost all growth in the investments in clean energy is taking place in advanced economies and China. This means that in other emerging markets and developing markets, a large part of the energy supply is based on fossil fuels, or these countries remain constrained by a lack of energy (see table below). The IEA indicates that although emerging and developing economies, other than China, account for 2/3rds of the global population, their share of clean energy investment is both low and declining. This is a worrisome development.

Global energy investment by region (USD bn)



Source: IEA, ABN AMRO Group Economics

Governments in developed economies and China are adapting already, but more action is needed

As mentioned in previous articles, several policy decisions are already hinting at an acceleration of investments in clean energy. In our **Sustainaweekly** of 24 October, we discussed the boost to plans for renewable investments. Support is not only seen here in Europe, where the EU Fit-for-55 and the RePowerEU plans stimulate more investments in renewable energy. However, also in the Chinese Five-Year Plan (June 2022) and the US Inflation Reduction Act (August 2022), ambitions for large investments in renewable energy were taken into account.

In the RePowerEU plans, the European Commission aims to accelerate the transition to renewable energy. The Commission proposes to increase the 2030 renewable energy target from 40 to 45 percent. In addition to this overarching ambition, the Commission is proposing more specific initiatives, including:

- An EU solar strategy to double PV capacity by 2025 and install 600 gigawatts of solar panels by 2030.
- A rooftop PV initiative with a phased legal obligation to install solar panels installing on new public and commercial buildings and new homes.
- Doubling the use of heat pumps and measures to reduce geothermal and thermal integrate solar energy into district heating systems.
- Aim for 10 million tons of renewable hydrogen production in Europe and 10 million tons of imports by 2030.

- A green gas action plan to increase production in the European Union from the current 3 billion m^3 (Guidehouse 2022) to 35 billion m^3 in 2030.
- A legislative proposal to speed up the licensing of renewable energy projects.

The REPower EU Plan will involve an investment of EUR 210 billion for the period 2022-2027. To support the Plan, EUR 225 billion in loans are already available under the Recovery and Resilience Facility (RRF).

The US Inflation Reduction Act will stimulate investments in renewable energy in several ways. This includes USD 30 billion is scheduled for investments in solar panels, wind turbines, batteries and advanced nuclear reactors. In addition, USD 27 billion was allocated for a 'green bank' to support clean energy in disadvantaged communities and USD 60 billion is to support low-income communities and communities of colour to reduce the carbon emissions. This brings the total investments in the US to around USD 370 billion for energy security and climate change investments, with the potential to mobilise far larger sums from the private sector. China's latest five-year plan still includes the aim to generate 25% of its energy from non-fossil fuels in 2030. However, it now also indicates that half the increase in electricity demand should be covered by renewable energy sources. And although that would still not be enough to bring China on track with a pathway towards Net Zero in 2050, China did overperform on renewable energy development goals in the last three five-year plans. Renewable energy investment has been an important economic engine in China and will play an even more significant role in boosting the economy than before, at a time when China faces the economic impact of Covid and uncertainties caused by the Ukraine crisis.

As a part of the 2015 Paris Climate Agreement, developed countries would support emerging and developing economies with financial means in order to step up the decarbonisation in those regions. However, so far every year the target of USD 100 billion support has not been reached. All eyes now shift towards COP27 in Sharm-El-Sheik, Egypt, where this topic will be on the agenda again.

ECB urges banks to speed up managing ESG risks

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- **ECB published its thematic review on climate-related and environmental risks**
- **There are still large blind spots, reducing the effectiveness of climate-related risk management**
- **Firm deadlines set for end 2024, with some intermediate targets as well**

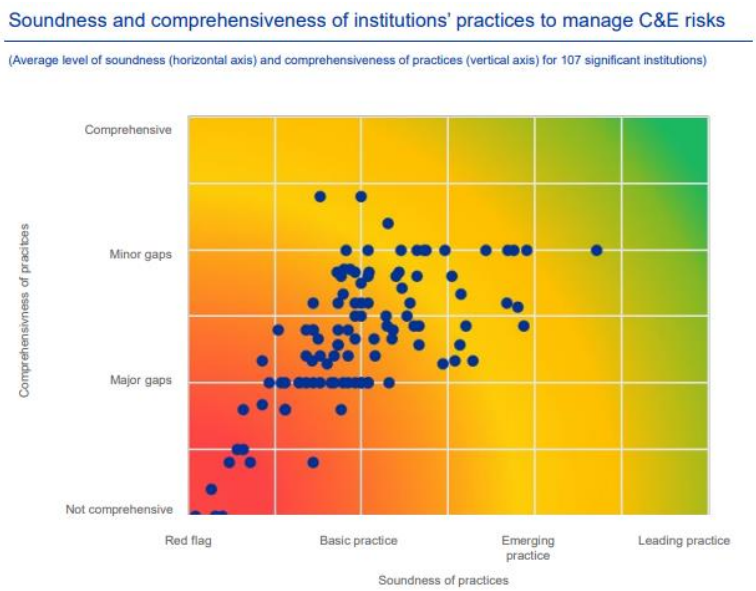
ECB thematic review on climate-related and environmental risks

The ECB published the findings of its thematic review on climate-related and environmental (C&E) risks on 2 November (see here). The review follows the publication of the ECB's guide on C&E risks that was published in November 2020 (see here) and which outlined the central bank's view how financial institutions should integrate C&E related risks in their business strategy as well as governance and risk management frameworks. As such, it lays the foundations for the ECB's way of supervising banks (or institutions) on C&E issues.

The results of this year's thematic review were incorporated in the ECB's 2022 Supervisory Review and Evaluation Process, SREP), which have an impact on Pillar 2 capital requirements. As such, the review clearly reflects the increased importance that the central bank attaches to management as well as governance of climate-related risks for banks. The sample included 186 banks, of which 107 significant institutions and 79 less significant institutions. Furthermore, the assessment was based around four core modules (i.e. materiality assessment, business environment and strategy, governance and risk appetite, and risk management framework) and three risk-specific modules. Finally, the modules were assessed from three different perspectives, namely their 'soundness' (i.e. existence and quality of the practices in the light of supervisory expectation), their comprehensiveness (i.e. extent to which the practices cover all material portfolios and risk drivers), and their effectiveness (i.e. whether the practices are effectively implemented in practice).

Overall, the ECB's verdict was that there are still many gaps in banks' assessments of C&E related risks, despite the fact that 85% of banks have in place some basic practices to assess C&E risks (see the graph below). The shortcomings range from the methodologies used, to execution capabilities as well as effective implementation of C&E risk mitigating practices. The ECB has sent feedback letters to all banks, which includes on average 25 shortcomings per institution. Furthermore, the ECB expects financial institutions to take decisive action to address shortcomings, setting a deadline at the end of 2024 when banks need to be fully aligned. In the meantime, the central bank has set intermediate milestones, namely:

- End of March 2023, when banks need to have incorporated sound and comprehensive materiality assessment
- End of 2023, when banks need to be able to 'manage C&E risks with an institution-wide approach covering business strategy, governance and risk appetite, as well as risk management, including credit, operational, market and liquidity risk management'



One of the key concerns of the ECB is about the capabilities of banks to execute risk management related to C&E risks. While many banks have made progress in their action plans to incorporate C&E risk management, the progress has remained limited and perhaps more importantly, more than half of institutions have not effectively implemented these. The ECB notes that although this might be partly related to rapidly changing landscape of C&E risk management, it is more likely related to more fundamental weakness in the implementation of C&E risks through their entire organisations. Indeed, the third line of defence plays only a minor role in this respect, if any. Please find below some key findings for the four core modules in the report.

Materiality of C&I risks

The first module assesses whether banks measure in a proper way the materiality of C&E risks across the banking organisation. In this respect, the review showed that 90% of institutions conducted a basic assessment of material C&E risk for at least one of their key risk types. This was mostly related to credit risk as well as strategic risks, and less so for liquidity risk or market risk. However, there remain a large number of blind spots, or risks that are not being included in materiality assessments, implying that banks do not have a comprehensive picture about the possible impact of C&E risks on their organisation. Indeed, 96% of institutions had blinds sporty, of which the ECB considered 60% to be major gaps).

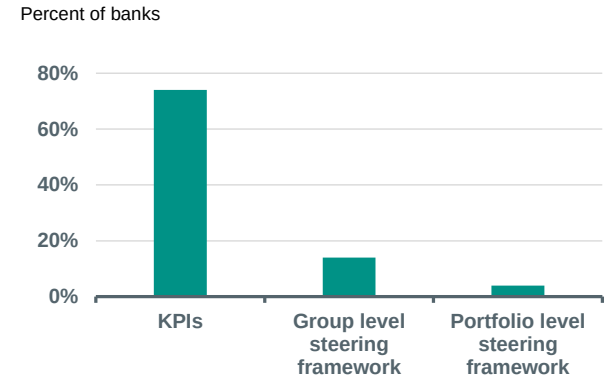
The main gaps stem from the fact that banks do not fully take into account relevant risk drivers, so focussing, for instance, only on the impact of transition risk rather than physical risk. Also the time horizons over which the risk could materialise into account are incomprehensive, while also the coverage of geographies and business lines falls short.

Strategy

The ECB demands that banks have a good understanding of the impact of C&E risks on their business environment, which should then be taken into account in strategic and business decisions. The blind spots mentioned above play a key role in this respect, given that many banks do monitor the impact of C&E risks on their business models, although they do this only partially or on a high level, excluding lower operating levels related to sectors, geographies, products and services. Indeed, 74% of banks have in place climate-related KPIs, but only 14% have a steering framework on a group level, and only 4% has such a framework on a portfolio level (see graph below left). Overall, this means that many banks do in practice have half-hearted policies in place to, for instance, take corrective action when KPIs are missed. This in turn, reduces the effectiveness of C&E related strategies or policies.

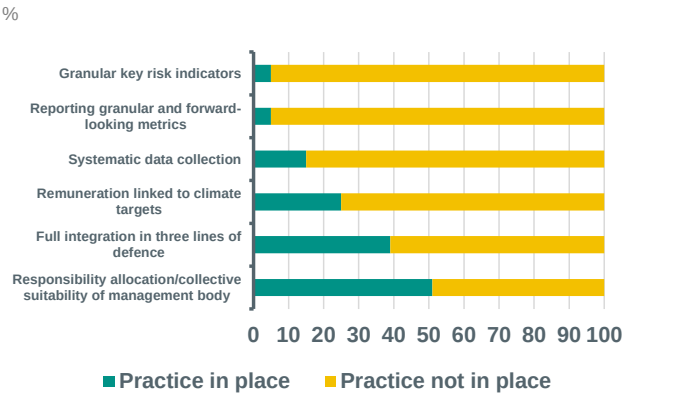
All in all, the ECB concludes that many banks still take a wait-and-see approach when it comes down to incorporating C&E risks into their strategies. Moreover, it is often unclear how banks effectively monitor these and how they want to achieve them. Finally, coverage of climate-related KPIs often falls short when compared to a bank's exposures, business model and risk profile.

KPIs incorporated in business strategy



Source: ECB

Selected criteria for proper governance of climate risks



Source: ECB

Governance of C&E risks

The report continues by assessing governance structures related to C&E risks. The ECB concludes that this has improved overall, with banks specifically becoming aware of data gaps. However, governance is still in the early stages of addressing climate risk in a 'granular, bank-wide and comprehensive manner'. Almost all banks have dedicated C&E related committees, but most banks fall short in integrating C&E policies in their third line of defence, implying that no independent internal reviews on management of C&E risks are executed. Meanwhile, good data plays a crucial role in assessing and managing climate-related risks, but many banks have not yet in place a systematic way of data collection. Only15% of banks have in place such systems, collecting granular data on, for instance, energy performance certificates (EPC labels) for mortgages and the split between revenues stemming from green or polluting lending. Having said that, banks rely heavily on data from the companies and households they lend to, which is often not available.

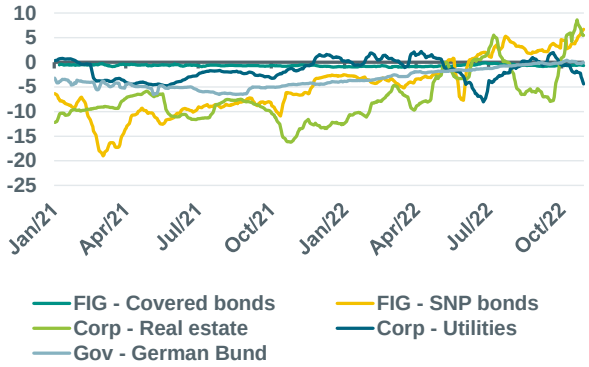
Risk management

Roughly 25% of institutions use advanced or forward looking quantification methods to measure risks stemming from climate change. This data is a crucial input to correctly measure the actual level of C&E risks. Meanwhile , 75% of banks have integrated climate-related issues into their capital adequacy assessments, although this is often based on qualitative judgements. Regarding credit risk, 25% of respondents had fully integrated C&E risks into the lending process, although most banks have incorporated some climate-related issues into their credit channel (but often not in a structural way). Meanwhile, almost all banks have in place measures to limit operational risk from climate change. This often refers to physical risks. Finally, the report shows that banks are increasingly taking into account other environmental risks, stemming from pollution, water stress, and biodiversity losses. Mostly, they use similar methods as those used to assess climate-related risks.

ESG in figures

ABN AMRO Secondary Greenium Indicator

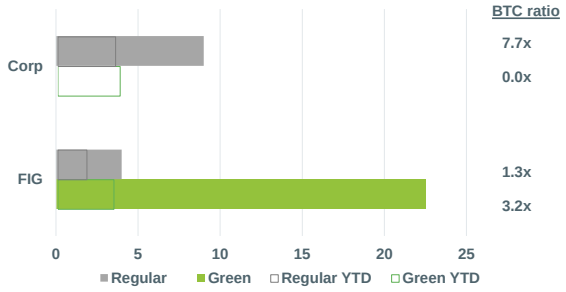
Delta (green I-spread – regular I-spread)



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

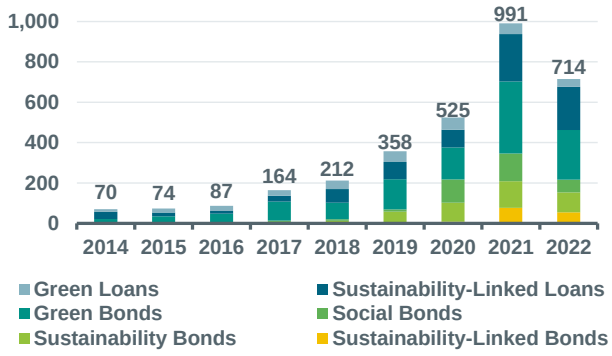
NIP in bps



Note: Data until 21-10-22. BTC = Bid-to-cover orderbook ratio. Source: Bloomberg, ABN AMRO Group Economics.

Sustainable debt market overview

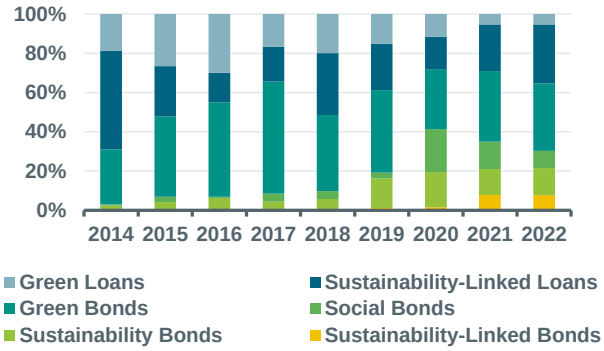
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of sustainable debt by type

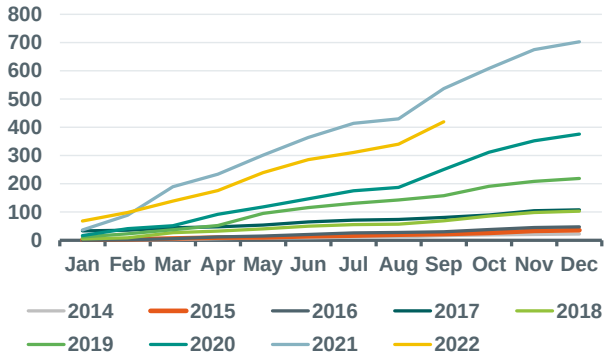
% of total



Source: Bloomberg, ABN AMRO Group Economics

YTD ESG bond issuance

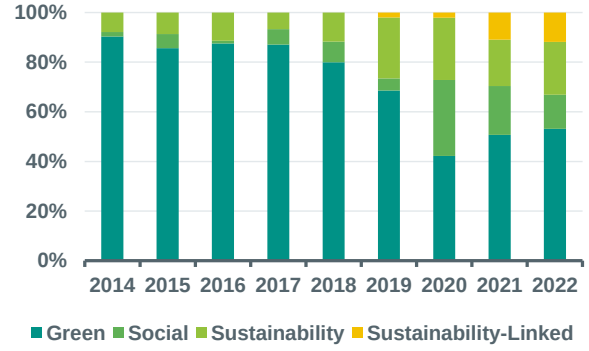
EUR bn



Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by type

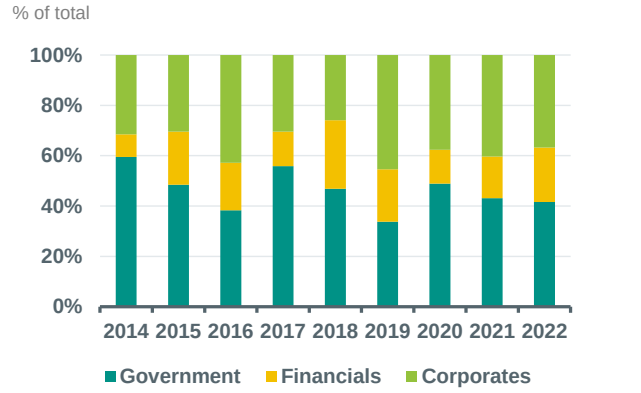
% of total



Source: Bloomberg, ABN AMRO Group Economics

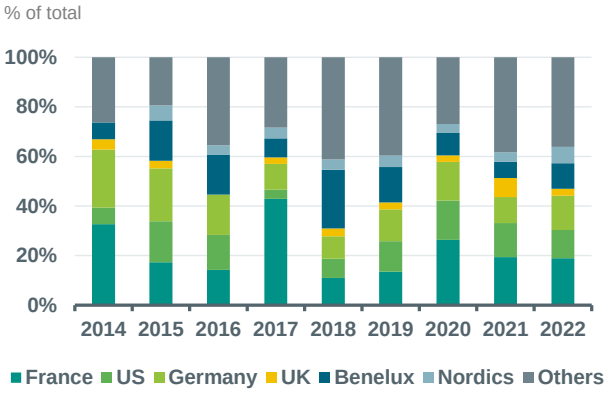
Figures hereby presented take into account only issuances larger than EUR 250m and in the following currencies: EUR, USD and GBP.

Breakdown of ESG bond issuance by sector



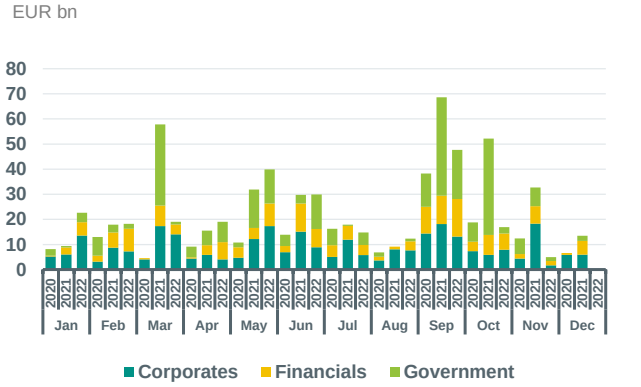
Source: Bloomberg, ABN AMRO Group Economics

Breakdown of ESG bond issuance by country



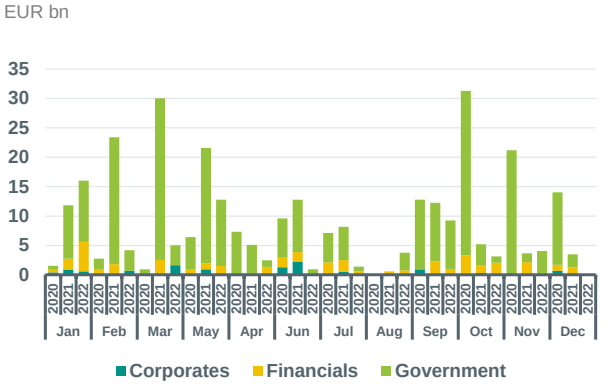
Source: Bloomberg, ABN AMRO Group Economics

Monthly Green Bonds issuance by sector



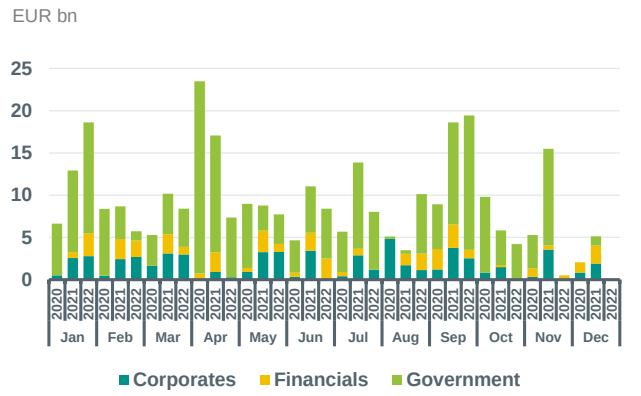
Source: Bloomberg, ABN AMRO Group Economics

Monthly Social Bonds issuance by sector



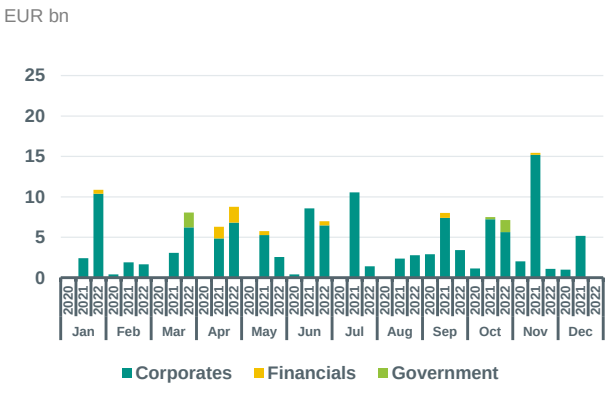
Source: Bloomberg, ABN AMRO Group Economics

Monthly Sustainability Bonds issuance by sector



Source: Bloomberg, ABN AMRO Group Economics

Monthly Sust.-Linked Bonds issuance by sector



Source: Bloomberg, ABN AMRO Group Economics

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

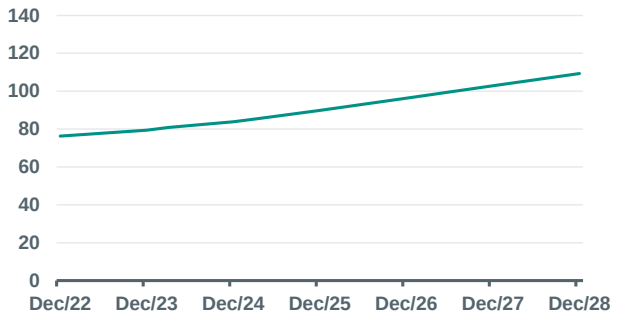
Carbon contract current prices (EU Allowance)

EUR/MT

Source: Bloomberg, ABN AMRO Group Economics

Carbon contract future prices (EU Allowance)

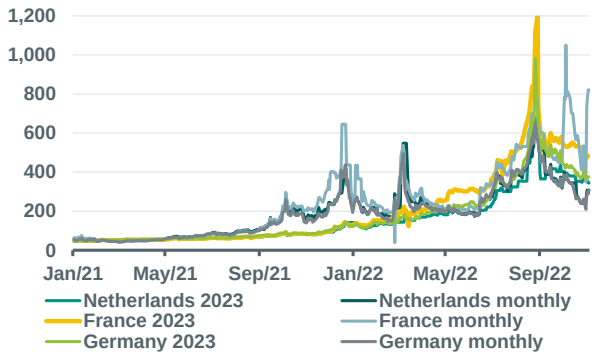
EUR/MT



Source: Bloomberg, ABN AMRO Group Economics

Electricity power prices (monthly & cal+1 contracts)

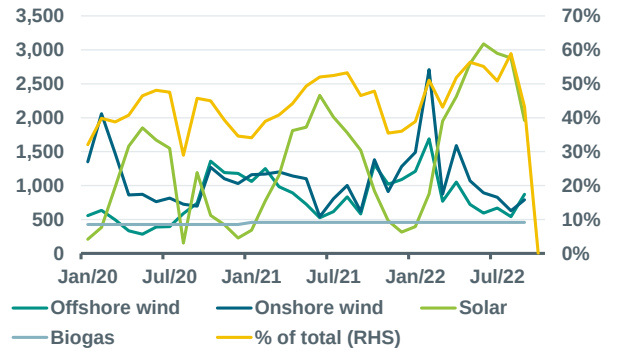
EUR/MWh



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

Electricity generation from renewable sources (NL)

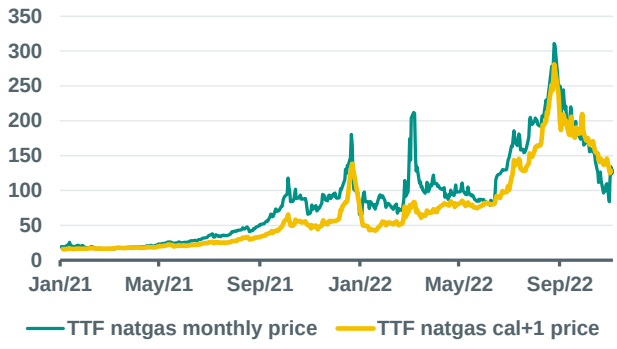
GW % of total



Source: Energieopwek (Klimaat-akkoord), ABN AMRO Group Economics, data as per September 2022

TTF Natgas prices

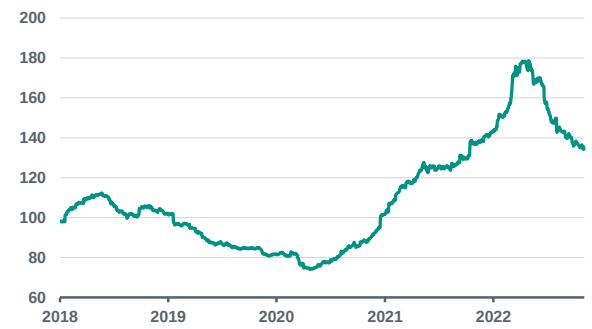
EUR/MWh



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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