HSBC Global Research

4 January 2023

The climate in 2023

Back to the climate reality

Free to View
Climate Change - Global

- Urgency must return to the climate process after a year of distraction with the global stocktake a(nother) wake-up call
- The flow of climate finance will be in the spotlight as de-risking is mixed in with revised pledges and extreme events
- We think investors will look more closely at corporate net zero plans as several regulators tighten climate disclosures

Don't look back: 2022 wasn't a great year for global climate progress, and the political distractions from climate ambition remain in play now. 2023 should start to reveal whether energy security concerns will morph back into energy transition plans, with the IPCC Synthesis report in March acting as a reminder of the urgency. More frequent extreme climate events should also drive the message home, while the UN Secretary General will host another *climate ambition summit* in September 2023.

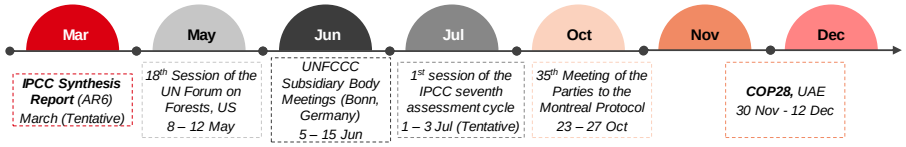
It's trillions: In 2023, attention will turn to climate finance requirements – trillions, not billions – and probe why these flows aren't happening faster. Calls to reform multi-lateral finance institutions will rise, given their key role in 'de-risking' investments; and focus will remain on concessional finance, given the poor fiscal outlook for many EMs.

The net-zero offset: Companies will face further scrutiny of net-zero plans, with a focus on the *quality of offsets* used. In our view, this could shift the focus back towards greater self (organic) decarbonisation. The tightening climate disclosures in, notably North America, the EU and Asia, will likely facilitate this closer examination.

Fit (or fall): The EU needs to finalise its Fit for 55 proposals this year to ensure these are enacted into law without further delay to meet 2030 targets. Its Carbon Border Adjustment Mechanism will ruffle a many feathers, in our view. Elsewhere, we expect India to continue moving steadily forward with its transition plans, and ASEAN to step up its efforts, despite its reliance on coal and oil.

The inaugural climate mark sheet: COP28 will take place in the UAE this year (30 November-12 December) and deliver the first global stocktake, which will likely show just how far we are from implementing the Paris Agreement and keeping 1.5°C alive.

Figure 1: Climate milestones in 2023



Source: UNFCCC, IPCC, HSBC

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2022 in review – not quite as expected

War, inflation and geopolitical tension were the key factors influencing 2022

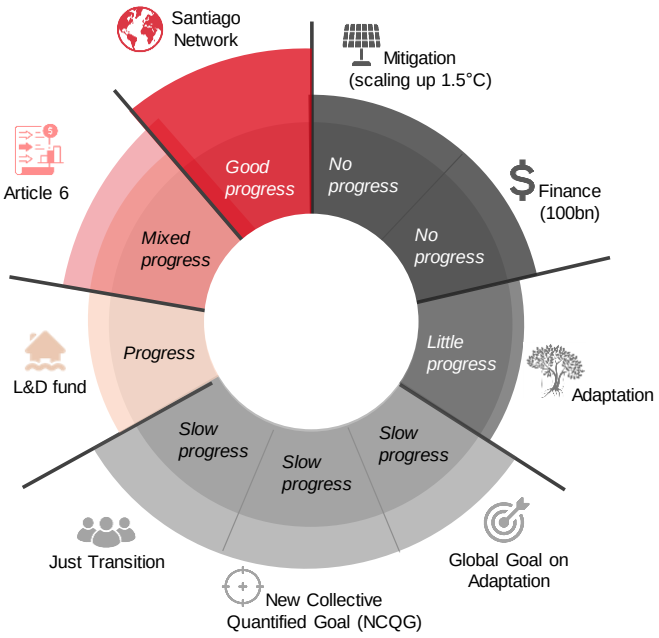
2022 wasn't a 'fantastic' year for global climate progress – the three main factors influencing climate ambition were not apparent at the start of the year: the Russia-Ukraine war, inflation (energy and food), and rapidly growing geopolitical tensions. The climate itself cares not for these things as the year saw plenty of extreme and record-breaking (again) events.

COP27 – Sharm el-Sheikh Implementation Plan

COP27 did not meaningfully raise climate ambition, in our view

There was inconsistent progress at COP27 after quite bitter negotiations, which overran by a day and a half. In our view, ambition was not raised in any meaningful way, leaving the 1.5°C target alive only on paper. The dominant and most contentious issue was the establishment of a Loss and Damage Fund, although virtually none of the details of the Fund were agreed. The goal is to operationalise the fund by the end of COP28 (December 2023). Disappointingly, only around 34 Parties (out of 198) had revisited and strengthened their climate pledges by the end of 2022 – with the same invitation to revisit and strengthen in 2023. Little progress was made in moving forward key discussions over the global goal on adaptation (GGA) and the new collective quantified goal (NCQG) on climate finance. Many other issues were left on the table for discussion at future climate COPs.

Figure 2: Our view on the progress made across various issues at COP27



Source: HSBC (based on UNFCCC, COP27 decisions)

From energy transition to energy security

The Russia-Ukraine war shifted the focus from energy *transition* to energy *security*

The Russia-Ukraine war significantly altered the speed of the energy transition. What was a *brisk walk* became a *panicked jog* as the usual supplies of energy were choked. Europe in particular made frantic attempts to secure energy for both residential and commercial use. This gave rise to a focus on energy *security* rather than on energy *transition*, at least in the near term. Inevitably, this meant more fossil fuels in the short term. However, there is a broader belief (as evidenced by the responses to our ESG Sentiment Surveys) that a focus on future energy security could actually speed up the energy transition over the longer term.

Inflation and political distraction

Cooperation over climate issues also suffered

The war added to the inflationary pressures already apparent in the global economy (pent up demand, supply-side constraints, logistics delays, etc.). Energy and food inflation in particular weighed on the minds of the general public and, as such, governments. From a climate perspective, there was less focus (in general) on climate issues from governments as they sought to appease the electorate and deal with domestic issues. In turn, this meant there was more distraction for policymakers. There was also the distraction of divergent geopolitical views across the world (war, power, trade), which increased global tensions and decreased the willingness to cooperate over climate issues.

The science must go on

The IPCC issued a dire warning about the consequences of inaction

The Intergovernmental Panel on Climate Change (IPCC) released parts 2 & 3 of its sixth assessment cycle (AR6). The *Impacts and Adaptation* report was a "dire warning about the consequences of inaction" as climate impacts are everywhere and effects will get worse with every increment of warming without climate resilient development. Further warming would lead us towards the limits of adaptation, but most climate actions are still feasible.

The *Mitigation of Climate Change* report stressed that mitigation options are widespread, but sufficient deployment requires adequate finance and broad stakeholder involvement. The IPCC laid out decarbonisation options and strategies across six key sectors, including energy, transport and buildings. Some sectors can contribute more, but this does not change the aggregate reduction required. Technology can be an enabler to reductions, but this could be "counterbalanced by growth in demand". The long-term economic benefits of addressing climate change now were emphasised by the report.

Integrity and greenwashing

Corporate net-zero details were few and far between

If 2021 was the year of setting corporate targets and "agreeing" to hit net zero, then there were expectations that 2022 would be the year of implementation and seeing some details on how these net-zero targets would be met. Set against a backdrop of global economic and political uncertainty, these net-zero details were few and far between. Instead the discussion turned (rightly so, in our view) to whether businesses were genuine in their commitments. In other words, did their plans have climate integrity or were they closer to greenwashing.

State of the climate

Extreme weather events did not let up in 2022, with many experiencing climate change up close and personal. The damage and loss of life made climate impacts a reality for many countries.

Figure 3: List of extreme events 2022

Extreme event	Month	Country/region	Comments
Heatwave	March	India	Hottest March for India in 122 years (since 1901), according to the IMD
Heatwave	March	Pakistan	Recorded the hottest March in at least past six decades, leading to rapid glacier melting and formation of several glacial lakes
Floods	June	Pakistan	Affected more than 33m people with estimated damage of approx. USD30bn; approx. 1,500 people died, according to Pakistan's NDMA
Heatwave	June-August	Europe, China	15,000 excess deaths claimed due to the EU's heatwave by the WHO; several provinces in China faced extreme heatwaves
Wildfires	June-August	Europe	Several countries, such as Portugal, France, witnessed large forest fires, with thousands of evacuations
Floods	June	China	500,000 people were impacted, including tens of thousands forced to evacuate in Southern China
Wildfires	July	US	The wildfire, as a result of extreme heat and wind, burned over 5,000 acres, was a threat to 500 mature giant sequoias in the Yosemite National Park

Source: Reuters, NOAA, EMDAT, WHO, HSBC
Note: IMD: Indian Meteorological Department, NDMA: National Disaster Management Authority

What to look out for in 2023

- We expect more discussion on the size of the temperature 'overshoot' and more focus on methane emissions, including potential pricing
- Re-embrace of nuclear energy will continue, while hydrogen, CCUS and the imposition of carbon border taxes may all pick up momentum
- Also gaining more prominence will be Just Transition considerations, climate litigation, and Scope 3 (including facilitated) emissions

COP28 in the UAE

COP28 will see the first global stocktake of the Paris Agreement

Following the very slow progress from COP27, the next major climate talks will take place in the UAE on 30 November 2023 to 12 December 2023. These talks will be important because they will be the **first global stocktake of the Paris Agreement** – to assess whether the goals of the Agreement are on or off track. There will be ongoing workshops throughout the year with regards to key elements, such as the global goal on adaptation and finance goals. Throughout the year, there should be ongoing discussions from the Transitional Committee for the Loss and Damage Fund. The challenging task is to prepare the Fund for operationalisation at COP28.

There will also be an intersessional meeting (SB58) on 5-15 June 2023. Key issues will be discussed in preparation for COP28. The technical dialogue of the global stocktake will conclude here. There are mounting concerns about the influence of the fossil fuel lobby (that was visibly influential at COP27 in Egypt). With the UAE being a fossil-dependent economy, the voice of fossil fuel interests could be louder, perhaps scuppering attempts to revive 1.5°C.

Science – in the background but always there

The AR6 synthesis report is expected in March

A synthesis: Following the three main reports of the IPCC's AR6, a synthesis report is expected in March (after the to-be-confirmed approval session of 13-17 March 2023). This final report has been delayed a number of times; however, its eventual publication should not only aggregate findings from the series, but also add to the sense of urgency, given the climate events of 2022.

More events: We also expect more climate events in 2023 (even as we continue with La Niña conditions this northern winter and head into ENSO-neutral conditions in the spring, according to the Climate Prediction Center). It means that 2023 could be warmer than 2022 and bring with it a commensurate number of extreme events.

Background sentiment: These extreme events should continue to fuel the discussion on adaptation. Although not receiving enough direct attention, the events of 2022 channelled into the COP27 discussions on the Loss & Damage Fund. Any extreme events in 2023 should also be strong contributing factors to raising awareness of future climate risks, equality, and the importance of resilience.

Anticipation of an increase in the frequency and magnitude of extreme climate events: Australia's National Science Agency warned the public that Australia will continue to see an increase in extreme weather events, including more dangerous fires[1]. In the United States, the 6th National Climate Risk Assessment shows that there are 50 counties expected to reach a heat index of 125 degrees Fahrenheit at least once in 2023; however, the number will rise to 1,023 in 2053. Extreme weather events are expected to continue, given the current trajectory.

Look out for more discussion around 'the overshoot'

Talk about an overshoot: From a technical perspective, coupled with the lack of ambition raising at COP27, we expect more discussion around "the overshoot" in 2023. In short, limiting temperature rises to 1.5°C is a goal for the year 2100. Meanwhile, however, we are likely to pass through 1.5°C – the question then becomes, how much do we "overshoot" before coming back down to 1.5°C in 2100. The size of the overshoot has implications for the level of extreme weather and slow onset events that the planet will likely experience. According to the World Meteorological Organisation (WMO), there is a 50:50 chance that one year in the next five will touch 1.5°C.

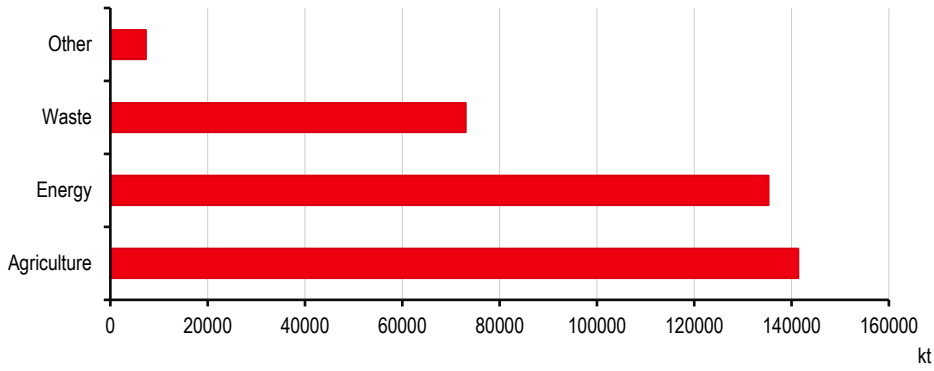
Methane

Detection technology and agricultural emissions will be key methane facets to watch

Record levels: According to the WMO, atmospheric levels of methane reached record highs in 2021 and are expected to rise in 2022 (there is a recording delay). Despite ongoing efforts to curb methane emissions, more effort is required to prevent further growth. There are two main facets to watch with regards to methane in 2023: **methane detection** technology and **agricultural emissions**.

Methane detection: An orbital NASA instrument recently proved that it can detect large, worldwide emissions of methane (*Reuters*, 26 October 2022), Further, to complement the data collection, a public database, the Methane Alert and Response System (MARS), was launched by the International Methane Emissions Observatory (IMEO) at COP27 in 2022. We think that with the advancement in the detection technology, methane pricing is likely to be considered, if not adopted in more jurisdictions, especially as more countries join the Global Methane Pledge.

Figure 4: World methane emissions from all sources



Source: IEA, HSBC

Methane in agriculture: In October 2022, New Zealand announced plans to charge farmers on livestock methane emissions. Australia joined the Global Methane Pledge in October 2022 and although it is unlikely to adopt any agricultural emission taxes, it committed AUD3bn (cUSD2.05bn) to support low-emissions technology and agricultural methane reduction, as well as AUD8bn (cUSD5.47bn) for the seaweed industry to support the growing usage of low-

1 CNN Business, Australia will see more extreme weather events, putting strain on economy, report shows, 23 November 2022

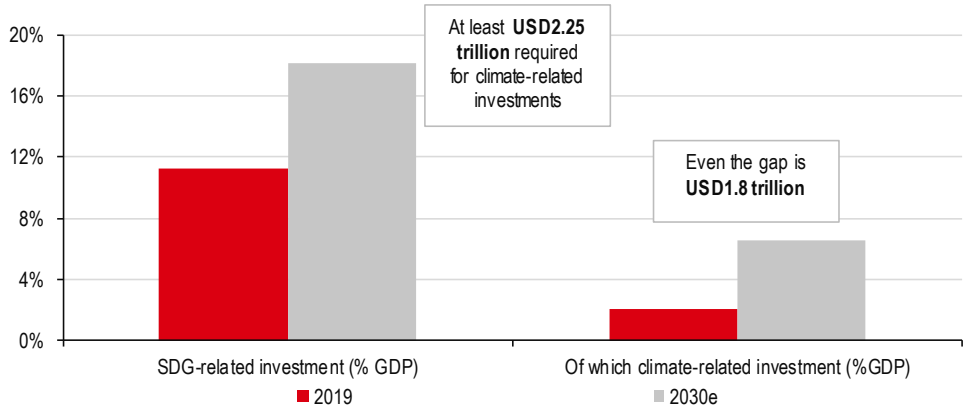
emissions livestock feed supplement Asparagopsis. We anticipate more attention on agricultural-related methane emissions in 2023.

Climate finance

Climate finance requirements are in the trillions not billions

Order of magnitude: As part of the UN climate process, developed countries continue to miss promised climate finance flows to developing countries (especially the USD100bn promised by 2020). The cover decision from COP27 highlighted that climate finance requirements are actually in the trillions rather than billions. In 2023, the world will start to focus more on what these trillions really mean in practice and why these flows aren't happening faster, in our view.

Figure 5: Investment needs per year for emerging and developing countries



Source: Grantham Research Institute on Climate Change and the Environment, HSBC

Calls are growing for the private sector to do more…

Enter the private sector: There are growing calls for the private sector to do more in contributing to climate finance. This will involve both the *mobilisation* of private finance itself as well as *leveraging* private finance via public finance. However, there are many complex barriers to raising the quality and quantity of finance for sustainable infrastructure, particularly in emerging and developing economies. The key market failure is perceptions of risk that lead to a prohibitively high cost of capital.

The world is starting to recognise that **multilateral finance institutions have a unique role** to play in overcoming these market failures, e.g. by "de-risking" investments, but their current activities in this regard, particularly around blended finance, have failed to deliver. Discussions at both COP27 and COP26 coalesced around **concessional finance**, that is finance that does not come with the same terms and conditions are so-called "normal" finance. We anticipate more debate around concessional finance through 2023, especially as the fiscal outlook for many economies – dealing with potential recession and inflation – may not be in a position to take on more long-term debt.

…and for institutions, such as the IMF and the World Bank, to be reformed

Calls for reform: There have been growing calls for structural reform of the Bretton Woods Institutions, e.g. the IMF and the Wold Bank, to enable them to more effectively tackle market failures and improve their leverage ratios. We believe calls to accelerate reform will grow in 2023. There are a number of prominent initiatives setting out the necessary reforms, including the Stern/Songwe Expert Group and the Bridgetown Initiative. Key shareholders of these multilateral institutions, including Germany, the UK and the US, are shifting to a more supportive stance on reform. For this reason, we expect the reform process to progress during the year ahead and for this to attract significant attention. Acceleration is crucial for scaling up finance for

sustainable investments and preventing lock-in of high-carbon assets in key emerging countries where demand for infrastructure remains high.

Energy transition

Following the shock moves in the fossil fuel landscape last year as a result of Russia's invasion of Ukraine, we now expect a more settled outlook for 2023, although only in the sense that we expect little to change vis-à-vis the situation extant in the latter half of 2022.

Specifically, we expect:

- Oil and gas prices to remain high as availability of both continues to be constrained by the curbs on Russian supply (in addition to the long-term issue of a lack of new upstream oil and gas investment);
- Ongoing tactical pivots towards alternative energy sources (mostly coal, some nuclear) to bridge the gaps left by the absence of Russian fossil fuels (making agreement on the phasing out of coal as part of the COP process even less likely in the near term);
- The heavy presence of the fossil fuel industry that we saw at COP27 in Egypt being repeated at COP28 in the UAE, with implications for a possible further increase in the focus on "low-emission energy" (most likely natural gas) in the COP28 cover decision, as well reduced chances of any commitment to *phase down fossil fuels*; and
- Linked to the above, the continuation of the renewed push (and debate) by developing countries (particularly in Africa) to be allowed to develop their fossil fuel assets.

Fossil fuel focus to continue in 2023

Fossil fuels were even more in focus in 2022, given the war and the resulting energy supply issues and price spikes. Climate impact was not entirely lost but was not given the priority it deserves. We anticipate these pressures to be broadly the same in 2023, given it takes much longer to build out and secure alternative options (renewable infrastructure or rolling out more efficiency, etc.).

Energy efficiency technology: A couple of upcoming technologies to watch in 2023 are:

Hydrogen and CCUS are technologies to watch

- **Hydrogen:** A range of sectors can be decarbonised by using hydrogen generated from renewables. It could become an important stepping stone to achieving net zero by mid-century. According to the IEA, 6% of cumulative emission reductions could be achieved using hydrogen-based fuels in 2021-50.
- **Carbon capture, utilisation and storage (CCUS):** Currently, CCUS facilities capture approximately 45Mt CO_2 annually, with plans to expand this to over 220 Mt CO_2 per year. We expect to see momentum pick up in CCUS in the coming year, especially after recent EU announcements to certify removals of carbon credits and their inclusion in EU climate targets[2].

Nuclear – back in the game

Investment in nuclear is on the rise again

Many countries are also increasing their investment in nuclear energy as a result of the Russia-Ukraine war. In 2022, a number of countries updated their policies to support new nuclear investment:

- In August 2022, Prime Minister of Japan, Fumio Kishida, announced plans to build new nuclear reactors and restart idle old nuclear plants (*FT*, 24 August 2022), signalling a comeback of nuclear energy since the 2011 Fukashima disaster.

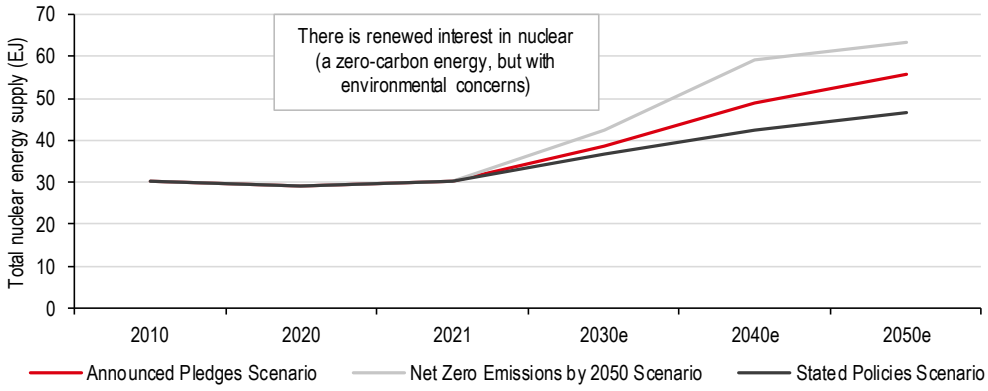
2 Reuters, EU takes 'first step' to certify removing CO_2 from atmosphere, 30 November 2022

- The Industry Ministry of South Korea updated its energy plan in July 2022 to increase the share of nuclear power in the energy mix to 30% by 2030, while President Yoon Suk Yeol has reversed the policy of phasing out nuclear energy (*Reuters*, 5 July 2022).
- In February 2022, President of France, Emmanuel Macron, announced a plan to build six large nuclear reactors with an option to build eight more by 2050 (*The Guardian*, 10 February 2022).

We expect more jurisdictions to (re)consider nuclear in their energy mixes going forward.

The *EU* also revised the EU Taxonomy to classify nuclear energy as a green activity (entered into force from 1 January 2023). The revision has influenced other countries' attitudes towards nuclear power generation. For instance, *South Korea's Ministry of Environment* announced that nuclear power would be included in the K-taxonomy, a domestic classification system of South Korea for environmentally sustainable activities.

Figure 6: Annual total nuclear energy supply (2010-2021) and IEA projection (2030-2050)



Source: IEA World Energy Outlook 2022, HSBC

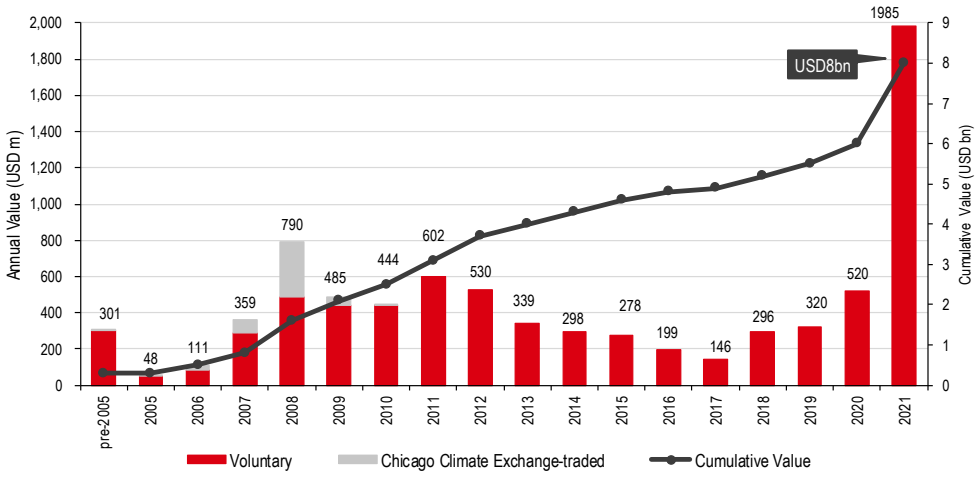
Carbon credits/offsets & VCMs

Carbon credits and voluntary carbon markets will attract greater scrutiny

As more companies make net-zero pledges, the demand for carbon offsets will also rise. For example, in 2021, Global Voluntary Carbon market values nearly quadrupled. However, as volumes grow alongside concerns over carbon integrity, we think scrutiny of carbon credits and voluntary carbon markets (VCMs) will grow in 2023.

Voluntary Carbon Markets: We expect growing calls for more transparency/disclosure over the types – and especially the *quality* – of offsets companies are using. Efforts to raise the quality of the VCMs will also be watched closely, including the Integrity Council for the Voluntary Carbon Market and the Taskforce on Scaling Voluntary Carbon Markets. We anticipate a steady rise in the ineligibility of poor quality offsets where environmental and social integrity cannot be assured; this will increase demand for higher quality offsets and significantly raise their prices. This could tip the balance back to direct (organic/self) decarbonisation in the private sector.

Figure 7: VCM size by value, pre 2005-2021



Source: Ecosystem Marketplace 2022 Edition, HSBC

Debate over removals: The nascent debate over the use of emission removals as offsets will continue in 2023. The debate surrounds the technicalities of **what actually constitutes a removal** and whether the removed carbon can be permanently stored (and how this is guaranteed). This discussion should grow alongside calls for companies to prioritise direct emissions reductions and only offset residual emissions using permanent carbon removal offsets. Removal offsets, particularly engineering-based offsets, e.g. direct air capture (DAC), are currently expensive. Focus will shift to efforts to develop these technologies, increase supply and reduce costs. Europe's plans to develop a removals markets and link these to the EU ETS have not been without some controversy – we expect these discussions to continue.

COP28 may provide more clarity on what may count as emissions removals

Article 6 of the Paris Agreement: The removals (and avoidance) debate also encompasses formal UN climate negotiations. Developments around Article 6 of the Paris Agreement are important as these rules and standards could impact VCMs. COP28 may provide more clarity on what types of activities may count as emissions removals.

Trade & carbon border taxes

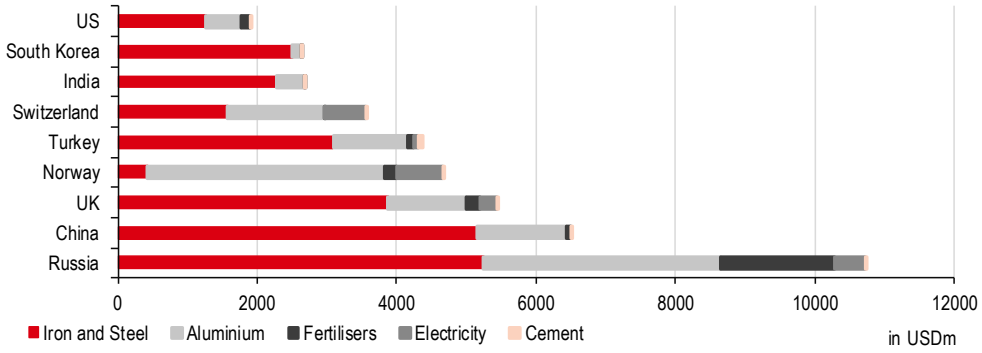
The EU's CABM will cause alarm but also possibly spur adoption of carbon border taxes elsewhere

EU CBAM: The EU's Carbon Border Adjustment Mechanism (CBAM) will begin to operate from October 2023[3], with reporting obligations only, until the start of the free emission allowances allocation phase-out in 2026. During the period of the free allocation phase-out between 2026 and 2034, the CBAM will only apply to the proportion of emissions that does not benefit from free allocation. Therefore, the CBAM is expected to be fully implemented by 2034[4]. Although we expect opposition from many jurisdictions, we expect this to be muted, given the long lead time. We expect growing opposition in later years, nearer the end of the transitional period.

3 *EU climate action: provisional agreement reached on Carbon Border Adjustment Mechanism (CBAM) - Consilium (europa.eu)*

4 *European Parliament (2022), Deal on a more ambitious Emissions Trading System (ETS)*

Figure 8: EU 27 average value of imports initially covered in the CBAM in 2015-2019



Source: resourcetrade.earth, Chatham House, HSBC

Other carbon border taxes: In our view, Europe's CBAM will accelerate the adoption of carbon border taxes in other developed countries, while accelerating the implementation of carbon pricing in developing countries. For example, the **United States** has already proposed a border adjustment tax (BAT) that is expected to start in 2024. We expect more details on the US proposal, and with it opposition from trading partners.

Germany also proposed a Climate Club for G7 members – to set a minimum carbon price so that products imported by club members will be subject to an adjustment tax.[5] Countries without a national emission trading systems might continue to seek ways for multilateral agreement on how to reduce the further disruption to the current fragile global trade environment. After the G7 leaders' endorsement of the *Terms of Reference for the Climate Club* (released in December 2022), the club will be launched by COP28. We think that in the coming year there will be more discussions over carbon trade agreements among countries.

Just transition

Just transition now gaining more prominence

There are concerns that the transition to a lower carbon economy will disadvantage certain segments of the community – those on lower incomes or those in specific roles, or Indigenous peoples and local communities, as well as women, children or the most vulnerable. The concept has been discussed for many years but gained more prominence during the pandemic and with the establishment of a Just Transition work programme at COP27.

Increased civil society pressure has sought more assurance from governments, regulators and other stakeholders to identify the impact of low-carbon policies and investments on individuals and communities. These pressures are beginning to affect policy actions. For example, the OECD and G7 governments have formed multiple Just Energy Transition partnerships with developing countries. Examples include South Africa (2021) and, more recently, Indonesia and Vietnam – with discussions underway (at the time of publication) for India and Senegal. We believe these will likely serve as an impetus for more partnerships in 2023; however, the form and substance of these (timeframe, type of loans, activities) will continue to evolve.

Climate integrity

We anticipate a strong focus on transition plan assessment

As more private sector actors (e.g. companies and financial services firms) make net-zero commitments and begin to understand the real implications of their net-zero targets, the debate as to whether a net-zero target is appropriate for a company will continue to evolve. All

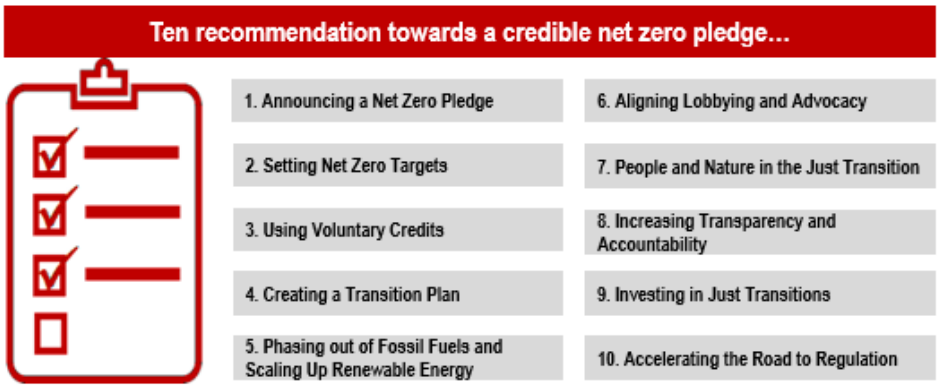
5 *What the G7 Climate Club means for carbon markets - Climate Trade*

stakeholders (regulators, shareholders, civil society) will apply more scrutiny to corporate climate targets and this will affect awareness, measurement, reporting and verification.

Beyond the targets, there will be a greater focus on how to assess the credibility of transition strategies. Strong targets without a credible implementation plan could raise transition and climate risks for companies and impact risk-return profiles. While companies will develop transition plans tailored to their individual business characteristics and needs, there is a strong push to develop standards and guidelines for external assessment of those plans.

We anticipate a strong focus on transition plan assessment in 2023, building on existing initiatives, such as the UN High Level Expert Group on Net-Zero Commitments of Non-State Actors (Integrity Matters) and the UK-led Transition Pathway Taskforce. These add to an existing body of work in the assessment space, e.g. methods developed by CA100+, Carbon Tracker, IGCC, etc.

Figure 9: UN's recommendations for a credible net-zero journey



Source: United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, HSBC

Climate litigation

Climate litigation could become more prominent in 2023

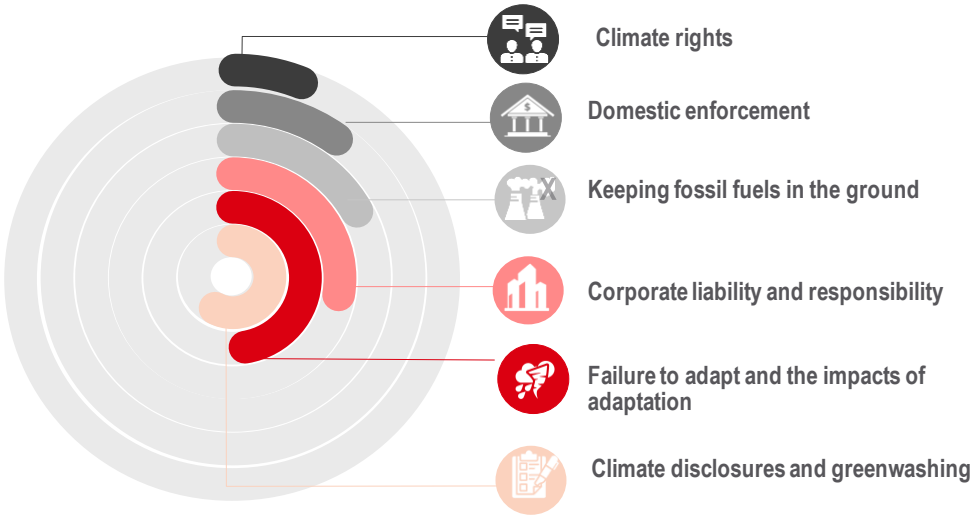
Small: There have been a number of cases in recent years where individual companies have had lawsuits brought against them by civil society (e.g. Friends of the Earth vs Shell) or even by local authorities (e.g. New York State vs Exxon). The results of these have been mixed – success in the case of Shell being ordered to reduce its emissions; failure in the case of NY State. The allegations and reasons in these cases were different.

Growing: The IPCC recognised that climate change-related litigation by governments, the private sector, civil society and individuals is fast growing, and it could influence the outcome and ambition of climate governance. Climate litigation could become more prominent in 2023, in our view. Globally, climate change-related litigation has doubled over the past seven years, and the number of countries with climate litigation cases has risen almost 60% in last five years (according to the London School of Economics). Also, the span of climate-related litigation is widening beyond the traditional fossil fuel sector to other industries, such as food & agriculture, plastics, transport and finance, among others. As the gap between climate ambition and action widens, climate litigants could further broaden their focus to the other high-emitting sectors.

Climate litigation cases broadly fall into six categories[6]: climate rights; domestic enforcement; keeping fossil fuels in the ground; corporate liability and responsibility; failure to adapt and the impacts of adaptation; and climate disclosures and greenwashing.

6 United Nation Global Climate Litigation Report: 2020 Status Review

Figure 10: Climate litigation cases broadly fall into six categories



Source: Global Climate Litigation Report: 2020 Status Review

Big: Countries are also seeking redress through legal means. For example, Vanuatu is *seeking an opinion* on the human rights around climate change through the International Court of Justice (*FT*, 10 November 2022). The resolution will likely be tabled in early 2023 at the 77th session of the UN General Assembly, with, most likely, a long lead time before an opinion is given (if granted). We think this could be the beginning of vulnerable countries exploring more creative ways to use legal channels in their pursuit of action on climate change.

Climate disclosures

The slow but steady tightening of climate disclosures will continue in 2023. The scrutiny applied in one market is rubbing off onto other markets. Although there are many different rules and regulations, there is a growing acceptance that more convergence is required – or at least more compatibility. The International Sustainability Standard Board (ISSB) is finalising its climate reporting standards, with a final protocol expected in 2023. We note that it is just a recommendation, however, and it remains to be seen how many regulators will fully adopt the ISSB climate protocol or merely allow it as an option or a recommendation among others.

Figure 11: Upcoming climate disclosure rules across markets

US – In March 2022, the SEC proposed new climate change disclosures. The rule, starting in 2024 filings and then in phases, will require public companies to report climate risks, similar to the globally recognised TCFD framework. We expect more clarity on the final rules in 2023 (after a delay from end-2022).
Canada – According to its 2022 Budget, Canada is set to introduce mandatory climate disclosures for banks and insurance companies in a phased-in approach from 2024. The mandatory reporting of climate-related financial risks will run across a broad spectrum of the its economy, based on the TCFD framework.
Malaysia – In 2022, the Exchange announced the enhanced sustainability reporting requirement that requires climate-related disclosures aligned with TCFD recommendations. The implementation will be in a phased manner commencing from 2023.
Hong Kong - The Stock Exchange of Hong Kong is exploring implementation of mandatory TCFD-aligned climate-related disclosures by 2025.
Singapore - Listed companies will be required to disclose their climate-related risks based on TCFD recommendations from 2023.
New Zealand – After three rounds of consultation, in December 2022, New Zealand issued final climate standards. First reporting year begins in 2023.
Australia – In December 2022, the Australian government launched a consultation on climate risk disclosures, with plans to make these mandatory for large entities, potentially as soon as 2024.

Source: HSBC (based on various official exchange websites)

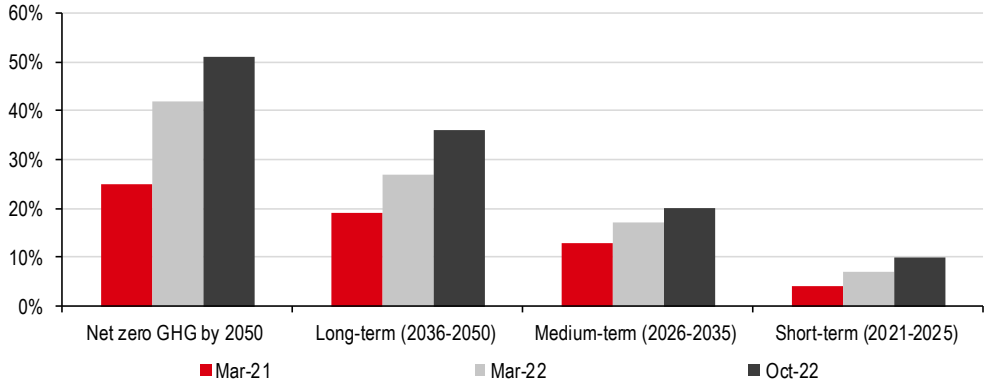
Carbon accounting

Scope 3 – the unsolved puzzle

Climate reporting standards likely to include Scope 3 emissions…

In *Scope 3 emissions: The largest piece in the net zero jigsaw* (11 July 2022), we highlighted the significance of Scope 3 emissions in climate risk and greenwashing assessment. We believe value chain emissions will continue to be a priority in 2023 – especially as the US, the EU and the ISSB are likely to include Scope 3 emissions in their upcoming standards. The adoption of Scope 3 emissions is rising as more companies include Scope 3 emissions in their climate targets. Still, more action is needed on Scope 3 targets and disclosure.

Figure 12: Inclusion of Scope 3 in various GHG (greenhouse gas) targets



Source: Climate Action 100+ Net Zero Company Benchmark Interim Assessments, HSBC

…including capital market-facilitated emissions

We also expect to see a new standard on capital market-facilitated emissions from the Partnership for Carbon Accounting Financials (PCAF) in 2023. Banks and financial firms have been criticised over facilitated emissions from bond or equity underwriting for carbon-intensive industries (*Bloomberg*, 28 February 2022) and this scrutiny has led to a rethink on how best to account for such emissions. We think the new PCAF standard should streamline the calculation and reporting process of such associated emissions.

The diversity of global action

- The EU should see advances across multiple fronts this year: Fit for 55, the European Green Deal, REPowerEU and the EU Taxonomy
- In the US, all eyes will be on implementation of the IRA, as well as progress on SEC climate disclosures and the Justice40 initiative
- China should progress on its ETS and CCER; in LatAm, concerns over deforestation (Brazil) and climate credibility (Mexico) will remain

EU – making proposals a reality

Fit for 55 package facing challenges due to energy and cost of living crisis

Fit for 55 package

2023 will be crunch time for the EU to finalise negotiations on proposals put forward within the Fit for 55 package and, crucially, to ensure such legislation becomes law. The Fit for 55 package represents proposals to revise and update EU legislation to reduce net greenhouse gas (GHG) emissions by at least 55% by 2030. 2022 saw progress on a number of proposals; however, as these enter into the final part of the legislature process ("trilogue"[7]), approval into law is likely to take several months. Given the European parliamentary elections in 2024, any delay in agreement could result in proposals only being enacted into law in 2025 – and, as such, the urgency. While there is momentum, challenges to agree to certain proposals have already arisen, primarily due to the energy and cost of living crisis.

Figure 13: The Fit for 55 package

Proposal	Description	Current status
EU ETS	Proposal includes emissions from maritime transport, phase out the free allocation of aviation emissions allowance & carbon offsetting	Trilogue phase
Effort sharing regulation	Binding GHG emissions targets for member states in sectors not covered by ETS	Trilogue phase
Land use forestry	Net removal of GHG, simplify accounting, monitoring and compliance	Provisional agreement; pending formal adoption
Alternative fuels infrastructure	Accelerate the deployment of infrastructure for recharging/refuelling alternative fuel vehicles	Trilogue phase
CBAM	Restrict offsetting through the relocation of emissions reductions	Trilogue phase
Social climate find	Support measures to vulnerable communities and individuals impacted by ETS for buildings and road transport	Trilogue phase
Refuel EU & FuelEU maritime	Reduce fuels from aviation and shipping	Trilogue phase
CO_2 emissions standards for cars and vans	Removal of ICU in markets by 2035	Provisional agreement; pending formal adoption
Energy taxation	Alignment of the tax on energy with policy, amending tax exemptions	Discussion with Council
Renewable energy	Increase renewables as part of the energy mix to 40% by 2030 *(see REPowerEU below)*	Trilogue phase
Energy efficiency	Increasing EU level target from 32.5% to 36% for consumption, 39% for primary energy consumption	Trilogue phase
Energy performance on buildings	New buildings to be zero emissions by 2030, existing buildings to be transformed into zero emissions by 2050	Trilogue phase

Source: European Union, HSBC

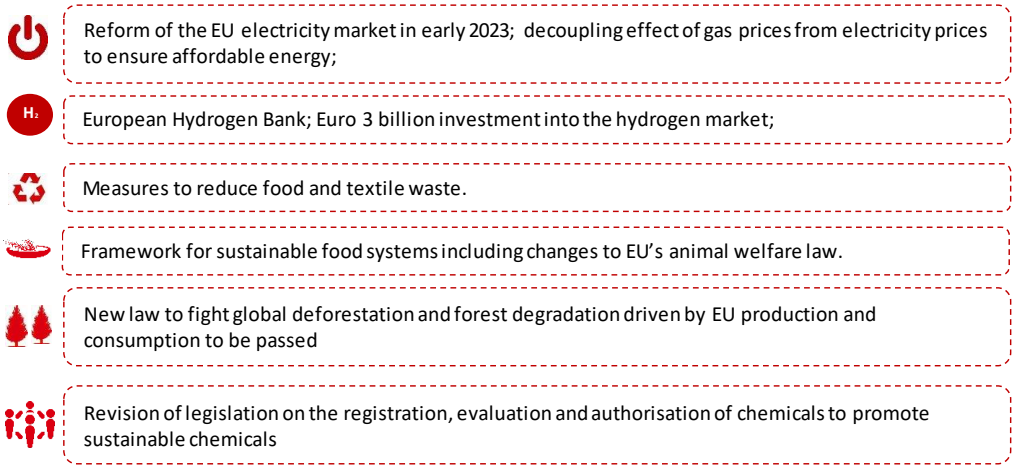
7 Between the European Parliament, the Council of the EU and the European Commission

Other key points

Don't forget the European Green Deal

The European Green Deal: In addition to the Fit for 55 package, The European Green Deal (one of the six *European Commission's priorities*) includes other key strategies that will make further strides in 2023. These include biodiversity, air and water quality, and sustainability of plastics and packaging. Other proposals to be particularly cognisant of include the following in Figure 14.

Figure 14: Highlights of the European Green Deal



Source: European Commission, HSBC

REPowerEU: To ensure the EU's independence from Russia's gas and oil, the REPowerEU plan will be further advanced in 2023. Short-term measures include the rapid rollout of solar, wind and hydrogen (increasing the target of renewable energy to 45% by 2030), increased bio-methane production, LNG diversification and other new energy partnerships.

EU Taxonomy: The inclusion of specific nuclear and gas activities within the EU Taxonomy came into force on 1 January 2023, after a motion to oppose it was rejected by the European Parliament in 2022. In addition, all non-financial entities from 2023 need to disclose the proportion of their company's primary KPIs that are Taxonomy-aligned. Financial institutions will also be required to disclose taxonomy-eligible activities.

US-EU Climate-based tariff agreement: The EU and the US have opined upon an agreement to further their climate agenda by placing tariffs on steel and aluminium from high-emitting countries, which will directly impact China, amongst others. Such an agreement marks a positive signal of an improved relationship between the US and the EU following recent trade disputes on the US's revival of industrial policy for specific industries. However, details remain vague and it is unclear how the agreement can circumvent existing WTO legislation. If it comes into force, the deal will only likely be agreed toward the end of 2023.

UK – standard disclosure

Extension of the TCFD

In April 2022, we saw the introduction of the mandatory **Taskforce on Climate-related Disclosures (TCFD)** reporting as the first step in climate-related disclosures for premium and standard listed issuers in the UK. The disclosures include four pillars (Governance, Strategy, Risk Management and Metrics and Targets) with 11 questions to assess the integration of climate issues within an organisation. The implementation timeline continues for various types of companies as the Government's Roadmap to Sustainable Investing continues to 2025.

Biodiversity in focus

In September 2023, we expect finalisation of the **Taskforce on Nature-related Financial Disclosures (TNFD)**, which was built on the foundation of the TCFD. This extends the framework and requires financial institutions and corporates to understand, report and act on nature-related risks and opportunities. The UK has endorsed the TNFD along with the United States, the EU, Canada, Germany, France, Italy and Japan.

Developing the standard for climate transition

The **UK Transition Plan Taskforce (TPT)**, launched in 2022, aims to 'develop the gold standard for private sector climate transition plans'. The TPT has published its disclosure framework and implementation plan, which is open for consultation until February 2023. Alignment with existing and emerging financial reporting requirements is recommended with a transition plan published standalone at least every three years. The TPT asks companies to consider high-level ambitions on climate change, as well as short-, medium- and long-term actions to achieve this[8].

The United States – the impact of reducing inflation

Looking for more clarity on the implementation of recent climate policies

The Biden administration delivered on major climate policy in 2022 and as we head into 2023, we are looking for more clarity on the implementation of these policies.

The Inflation Reduction Act (IRA), which included the largest investment (cUSD370bn) in US history to fight climate change, was signed into law in the summer of 2022. Under the IRA, the renewable energy credits were extended and expanded to include not only wind and solar but other technologies, such as energy storage and hydrogen. In our view, the IRA should boost investments in renewables, as it improves the economics of renewables versus gas and coal, and incentivises the debottlenecking of supply chains. We think developers of renewable energy like wind and solar, and large energy projects like hydrogen, are also positioned to reap benefits from the IRA. Additionally, the already growing EV market will realise benefits from the EV tax credits offered, which can help push corporate and individuals to electrify their car fleets. As of 1 January 2023, consumers and businesses will be able to access these IRA tax credits.

Renewable and EV manufacturing in the US will have multiple drivers

Renewable and electric vehicle manufacturing build out in the United States will be pushed by not only tax incentives in the IRA but also through the CHIPS and Science Act, passed early in 2022, which will help boost local manufacturing of zero-carbon technology. While momentum to localise manufacturing started to be seen in 2022, we expect to see more business models prioritising US supply chains in 2023.

Other key developments we will be watching in 2023 include:

- Despite movements made by the US Securities and Exchange Commission (SEC) to issue its Climate Risk Disclosure rule by the end of 2022, it failed to be released. While we have become well accustomed to delays around the **US Climate Risk Disclosure**, we believe pressure by corporates, investors, and regulatory bodies around the world, which have already delivered on climate disclosures, are being felt by the SEC. We anticipate more clarity around this rule in early 2023. The *proposed* rule closely aligns with the TCFD, already supported by many jurisdictions, and stipulates clarity around Scope 1, 2 & 3 emissions, and carbon offsets.
- **Climate change continues to be a polarising issue in the US government**. Nonetheless, 2022 saw substantial political will to address the climate crisis. As a result of the 2022 mid-term elections, Democrats maintained a majority in the Senate and Republicans narrowly flipped the House, which we believe could drive more scrutiny around new climate legislation. However, substantial climate change efforts have already been signed into law— including the IRA, the Infrastructure Bill and the CHIPS Act. These acts

8 'The Transition Plan Taskforce Summary recommendations', TPT, November 2022

along with state climate action, in our view, will provide the US with momentum for climate action in 2023.

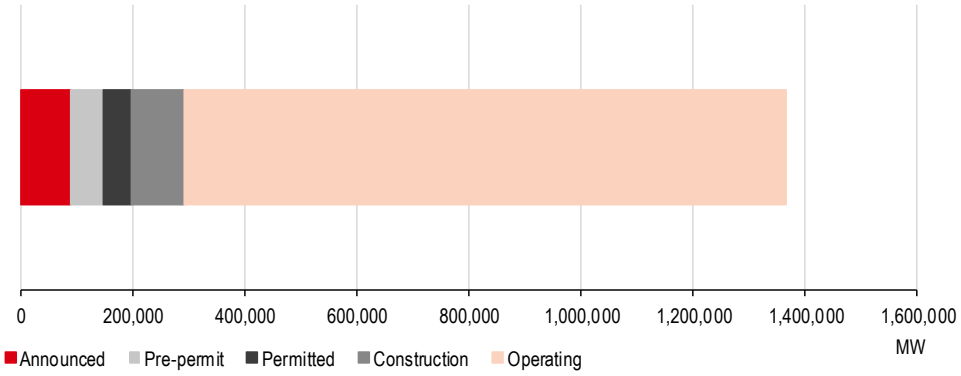
- Conservation received a seat within the Biden administration's climate agenda and we believe heightened global priorities around biodiversity mean there will be more of **a focus on nature in 2023**. Released at COP27, the US Nature-based Solution Roadmaps outlines strategic steps to unlock nature-based solutions (NbS) to address climate change, among other societal concerns. The roadmap aligns with the IRA and Infrastructure Act, where over USD25m in funding can support NbS.
- The Biden administration's **prioritisation of low-income and marginalised communities in this zero-carbon transition**, in our view, will be a continued theme in 2023. Last year saw improved data tools by the Department of Energy to better understand burdened communities, and more detailed strategies around President Biden's Justice40 initiative to direct 40% of climate and infrastructure investment benefits to disadvantaged communities. We think action around this initiative will be clearer and more quantifiable in 2023, especially due to the IRA, which puts forth tax benefits for energy developments located in communities that face certain energy transition challenges and are low income or on tribal land.

China – on the rebound

Emissions to rebound as the Politburo prioritises economic growth in 2023

Contractions in the real estate sector and strict COVID-19 restrictions caused China's fossil-related carbon dioxide emissions to fall around 0.9% in 2022. However, this is not a peak of China's emission. As China's new Politburo committed to prioritise economic growth in 2023, we expect to see a rebound in emissions alongside the relaxation in pandemic restrictions from January. China already increased its coal production and continued building new coal power plants in response to the energy crisis in 2022. Global Energy Monitor estimated that China approved up to 15GW new coal power capacity in the first half of 2022.

Figure 15: Coal-fired power capacity in China (MW)



Source: Global Energy Monitor, HSBC. (Note: Updated in July 2022)

More action on methane expected from China

Methane action plan: Following the commitment to develop a national action plan on methane in a US-China joint climate declaration in 2021, China announced its draft methane plan was pending approval in November 2022. We expect it to be released this year and to cover the energy and waste management sectors. However, China still hasn't signed the Global Methane Pledge or made an official commitment to reduce 30% of methane by 2030. Despite this, we expect enhanced cooperation between China, the US and the EU on methane reduction this year as signalled by the appearance of China's climate envoy, Xie Zhenhua, at the US-EU led methane event at COP27.

ETS and CCER to be expanded and improved

Carbon markets: The national emissions trading system (ETS) has been running for more than a year since its launch in July 2021. We were expecting two or three sectors (construction materials and ferrous metals) to be added to the national ETS in 2022; however, the expansion was delayed by the poor quality of reported data, global energy instability and weak economic activities. In October 2022, the Ministry of Ecology and Environment (MEE) *announced* it would strive to expand the coverage of the national ETS and improve the China Certified Emissions Reductions (CCER) trading mechanism as requested by the 20th Congress Report. In addition to the ETS expansion, we anticipate updates of the resumption of CCER project registration in 2023, which has been paused since 2017.

India – leadership in 2023

India moving steadily ahead on multiple climate policies…

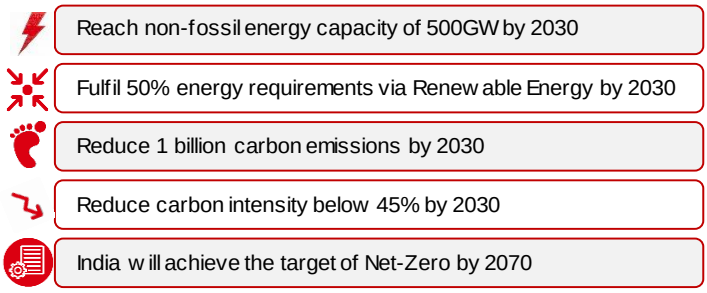
A steady 2022: India quietly updated its energy efficiency policies, renewable deployment, and other climate policies, such as NDC and LT-LEDS, last year. Notably, it also released its National hydrogen plan. As a result, a recent Climate Change Performance Index report by *German Watch*, positions India in 8th position, the only G20 nation among the top 10 in the index.

In December 2022, India's Parliament passed the Energy Conservation (Amendment) Bill, which institutes a carbon credit mechanism to cap emissions by large energy consumers. They will be required to meet minimum energy shares in non-fossil energy. If consumers overachieve the requirements, they will be issued carbon credits, which could be traded with other parties. However, the scope of "non-fossil energy" is not clearly defined. Although one to watch in 2023, we think more clarifications are needed to attract more investments.

Tightening in 2023: On the regulatory side, the Reserve Bank of India (RBI), released the results of a survey on Climate Risk and Sustainable Finance along with a discussion paper with suggestions and guidance over the summer. We think India will tighten its scrutiny on climate disclosures with more corporate mandates in 2023 and beyond.

More to come: India took over the G20 presidency from Indonesia in December 2022 and will convene the summit for the first time in the country in 2023. This may be a precursor to strengthening India's efforts towards a greener future through newer policy and targets.

Figure 16: Roadmap for greener India



Source: G20 website India, HSBC

…though may need more regulatory scrutiny to keep greenwashing in check

We think India needs to be more vigilant in terms of implementing newly announced policies, with more regulatory scrutiny to keep 'greenwashing' at check, especially as climate-related strategies and disclosures are relatively new to many corporates and other stakeholders.

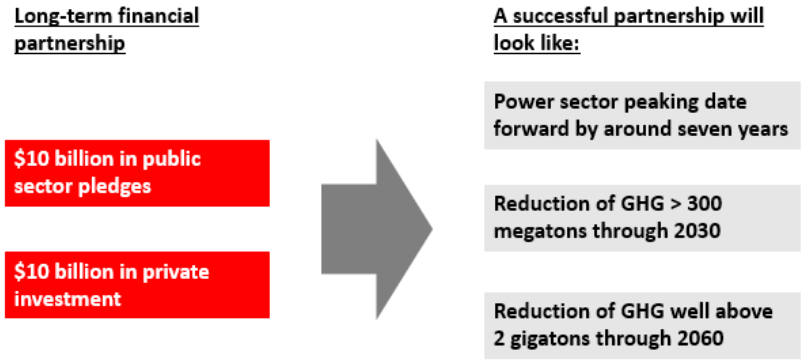
ASEAN – steady progress all round

ASEAN stepping up efforts, despite its high reliance on coal and oil

The great transition: ASEAN countries are stepping up efforts to invest in the green transition, despite their high reliance on coal and oil. We expect reporting standards to be strengthened in the coming year alongside growth in the number of member nations adopting carbon pricing.

Indonesia: During its G20 presidency, the nation received USD20bn from developed countries and global private lenders through the Just Energy Transition Partnership. A comprehensive investment plan is expected in 2023. Investment is likely to be channelled to incentivise the retirement of coal power plants.

Figure 17: Indonesia's JETP climate targets and associated financing



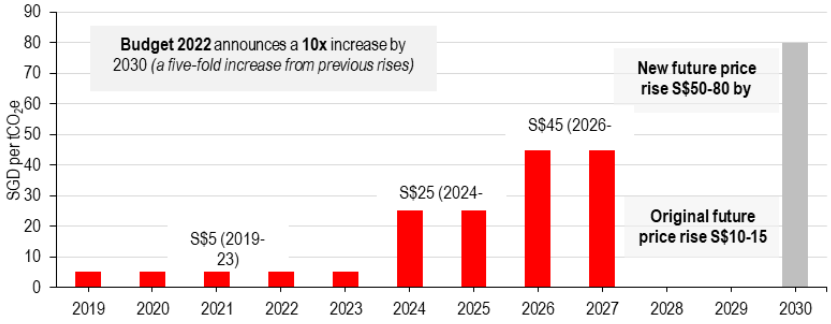
Source: The White House

Indonesia's delayed (from April 2022) carbon tax is likely to be implemented this year after comments from the Ministry of Economic Affairs and also given the nation's updated climate pledge (a more aggressive 2030 emission target).

Malaysia: In the 2023 Budget of Malaysia, the country announced its intention to introduce a carbon tax to incentivise carbon capture and storage. There is, however, no specific timeline, but it does show the ambition Malaysia has on developing carbon technology and reducing carbon emissions nationally in 2023.

Singapore: This year we expect Singapore to continue its progress towards achieving net-zero emissions by 2050. Singapore's Parliament has already passed a bill to raise carbon taxes. Given that corporates can use eligible international carbon credit to offset up to 5% of their taxable emissions, a new international carbon credits framework will be presented this year.

Figure 18: Singapore's carbon tax trajectory



Source: HSBC

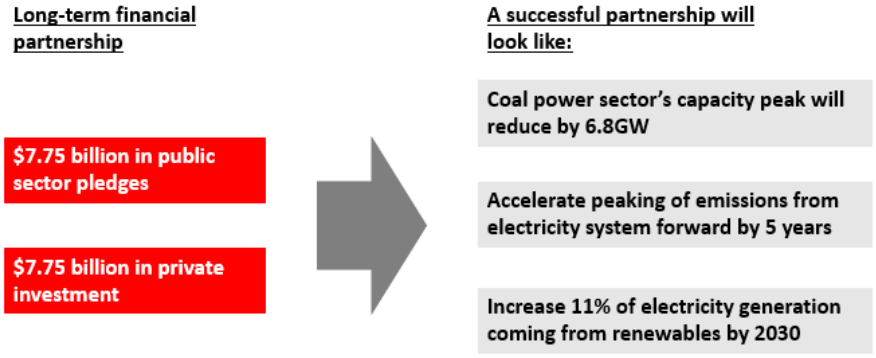
Climate Impact X (CIX), the carbon credit exchange, will undergo a major upgrade – the platform will enable spot trading of carbon credits in early 2023. In addition, climate reporting will be mandatory for SGX-listed issuers in the *financial, agriculture, food and forest products, and energy industries* beginning from 2023.

Philippines: The implementation of a carbon tax is currently under consideration, but we anticipate the study to span the whole year.

Thailand: The Kingdom launched the first voluntary carbon market (FTIX) last year. In 2022, the Securities and Exchange Commission in Thailand also collaborated with CDP to explore options to further improve the environmental disclosures of corporates in Thailand. A framework that follows the TCFD in corporate disclosure could be in the works for 2023.

Vietnam: Vietnam came to a USD15.5bn *agreement on JETP* with the International Partners Group in December 2022. It will eventually lead to an increase investment in renewables, while retiring fossil fuels. Vietnam will publish its JETP Resource Mobilisation Plan in November 2023. We are also expecting an update on its energy plan, including a reduction in the number of new coal-fired power plants to be built in next three years.

Figure 19: Vietnam's JETP climate targets and associated financing



Source: European Commission

MENA – COP28, renewables, fossil fuels

A second COP in succession will maintain climate pressure on the region

More COPs: With Egypt's COP27 having achieved only limited progress (albeit in a difficult year), all eyes will now turn to the UAE's COP28 to up the pace of decision making and delivery. Whatever else it may or may not achieve, we expect a second MENA COP in succession to maintain pressure on the region to continue playing catch-up in terms of climate ambition and action. Indeed, as part of its own NDC upgrade last year, the UAE flagged its intention to release yet another upgrade this year (including a switch from business as usual to 2019 as a baseline), as well as to publish a long-term climate strategy. We think these moves by the UAE could prompt others in the region to keep their own climate momentum moving forward – particularly Saudi Arabia.

Still fossil-based: That said, the clean energy sector is not being built out fast enough globally, and with measures to reduce energy demand proving very challenging, the reality is that there will still be new hydrocarbon investment. In this context, we think the UAE, Saudi Arabia and Qatar will continue to increase their oil and gas production capacities, while also continuing to reduce the carbon intensity of their exports. Indeed, we think the relatively lower carbon

intensities of ADNOC and Aramco may fuel discussion of taking on oil & gas production requirements from higher emitting producers as we approach COP28.

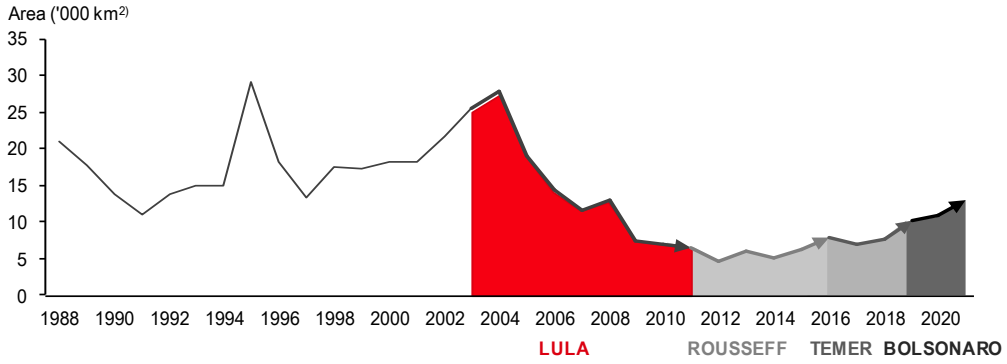
More hydrogen: One aspect of regional climate planning that leapt to the fore in 2022 was the further development of green hydrogen strategies, with those of Egypt and Oman standing out in terms of size and ambition. Although the projects are still largely at the concept stage, we see several advantages accruing to the MENA region over locations elsewhere: high renewables potential (especially for solar) is one of them, and land availability is another. In Egypt, allocation of land for nine proposed projects (with a combined capacity of up to 7.6m tons of green ammonia and 2.7m tons of hydrogen a year) is imminent and Oman expects to award seven blocks of land by April 2023 (*Oman Observer*, 24 October 2022). Final investment decisions will be the next key milestones to watch, as well as global developments in the subsidy landscape following the introduction by the US of a USD3/kg credit for green hydrogen.

LatAm – a mixed bag

Deforestation (Brazil) and climate credibility (Mexico) will remain key issues

All change in Brazil: President Luiz Inácio Lula da Silva's (Lula) track record on deforestation is positive, having halted three-quarters of the annual rainforest destruction that he inherited during his first term as President (2003-10). However, past performance is not necessarily an indicator of future performance. In fact, under his party's successor, Dilma Rousseff, the trend reversed very quickly.

Figure 20: Annual deforestation of the Brazilian Amazon



Source: Brazil's National Institute for Space Research

According to President Lula's current government plan[9], several actions to combat deforestation will be retaken and strengthened. What these are and whether he has the political will and the capability to reverse the built-up deforestation momentum remains to be seen. Centre and centre-right parties have retained the majority of the seats in the Lower House and in the Senate.

Energy in Mexico: Another key climate concern in the region is Mexico. President Andres Manuel Lopez Obrador (AMLO) has been adamant about not privatising Mexico's energy to "save the country's oil industry for the people". Per Bloomberg opinion, this means reinstating public monopoly control of the sector.[10] In 2022, a government report found that the country is several years behind its climate targets. Mexico just submitted a new, slightly more aggressive NDC for COP27; however, there seems to be a wide gap between the country's ambitions and local policy that needs to be closed. We do not expect significant progress from Mexico in 2023.

9 *President Lula's current government plan*
10 Bloomberg Opinion, Mexico's Energy Grid Risks Fading to Black, 12 October 2021

Australia & New Zealand – progress with practical barriers

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Australia – Climate change policy progress is being made …

The May 2022 election was a game changer for climate policy in Australia. After over a decade of large and volatile climate policy shifts, the 2022 election delivered a strong swing in the electorate to prioritising the decarbonisation agenda.

Since winning that election, the ruling (centre-left) Labor Party moved quickly to commit to 'net-zero' emissions by 2050 (a commitment that had already been made by the states and territory governments). In its first few months in power, the government also committed to a new target – a 43% reduction of GHG emissions by 2030 below 2005 levels – and delivered Australia's first Annual Climate Statement, enshrining the goals into law in the Climate Change Act 2022.

The federal government's 'Powering Australia' plan also set out a broad-based set of policies aimed at reducing emissions by boosting renewable energy. Included is Australia's first National Electric Vehicle Strategy, a focus on green metals, batteries, and a restoration of the Climate Change Authority. The plan also laid out policies across the transport, agriculture, and electricity sectors.

…but the practical battle is still large

In the short run, as is the case in many other countries, Australia is facing an energy crunch and price spike. This has seen the government take action to cap the gas price. The deeper structural issue is not just that Australia's energy system is still highly dependent on fossil fuels but that the country is also one of the world's largest exporters of coal and gas. Nonetheless, the policy progress described above is a significant positive step. And, as we have pointed out recently, Australia has a substantial opportunity to also become an exporter of renewables. We see continued progress on this agenda as likely in 2023.

New Zealand – methane challenges in an election year

Despite its 'clean and green' image, New Zealand has significant challenges in meeting its GHG emission goals, in large part due to its large agricultural sector.

The government has signalled for some time that the country must take action to address the climate crisis. In 2022, the government set out its emissions reduction plan – a set of policies aimed at achieving the targets in New Zealand's Emissions Budgets – including a focus on EVs, energy efficiency, forestry, and agriculture. Keep in mind, New Zealand already has a broad, market-based approach to emissions, in the Emissions Trading Scheme.

For agriculture specifically, the current Labour (centre-left) government has also recently proposed taxing methane emissions from farms from 2025. This proposed tax on methane has been highly contentious and is politicised. We expect that it will be a key issue of debate in the New Zealand 2023 general election (likely to be held in 2H23), with the opposition National Party (centre-right) stating that it plans to repeal the tax, if elected.

Disclosure appendix

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Additional disclosures

1 This report is dated as at 04 January 2023.

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