The climate in 2021

Implementing the politics of ambition

Free to View
Climate Change - Global

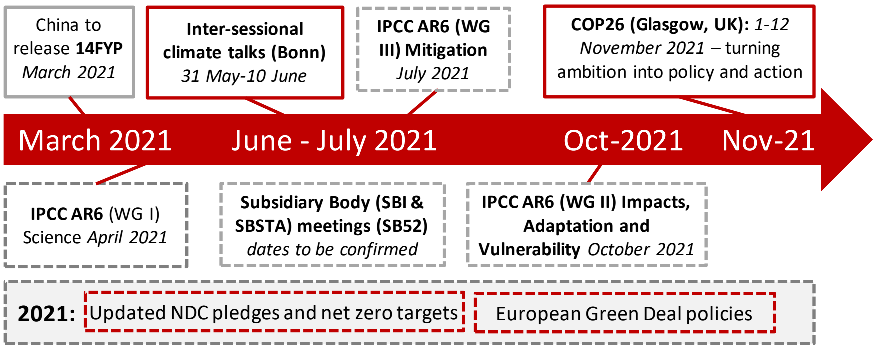
- Building on recent (and surprising) momentum, 2021 could be a milestone year for climate as pledges become actions
- This year, the IPCC will release AR6 – crucial updates on the science of climate change, its impacts and mitigation options
- We think investors should prepare for an acceleration in the speed of transition towards low and zero carbon economies

Speaker view: After a roller-coaster 2020, focus on climate change is back as major economies such as the EU, China and the US strive for climate leadership in 2021. The EU will continue on its path to net zero emissions with the European Green Deal, China will pivot towards net zero emissions in its next Five-Year Plan and the US will embark on an about-turn with the incoming Biden-Harris Administration. Throughout the year, many countries are expected to update their 2030 climate pledges (NDCs) as well as announce plans to achieve carbon neutrality by mid-century. In our view, however, these plans must be turned into action and the policies implemented with broad political support as calls for the economic recovery to be a sustainable and equitable one grow.

Virtual background: Midst our restrictions and lockdowns, extreme events continued in the background. Climate science should receive a boost as the IPCC (the UN's climate science body) publishes three key reports as part of the Sixth Assessment (AR6). The Special Report on 1.5°C of 2018 is credited with driving the ever increasing net zero targets from countries and corporates alike. We expect AR6 to impart an additional sense of urgency to COP26 in Glasgow, UK in November.

Not on mute: There are several issues to listen out for as the Task Force on Climate-related Financial Disclosures (TCFD) becomes the gallery view to various disclosure regimes and standards. Carbon pricing's star should rise as countries look at all options to meet targets. We think the loudest voice in 2021 will come from the net zero pathway with echoes of carbon capture and offsets audible too.

Figure 1: Major milestones in the climate calendar in 2021



Source: HSBC

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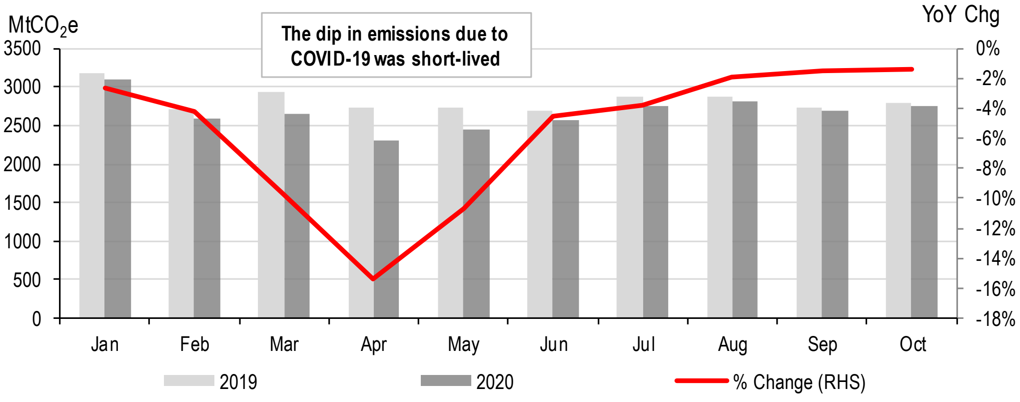
2020 in review: the COVID-19 blip

***Annual* emissions may have fallen, but *cumulative* emissions continued to rise**

Emissions blip: Needless to say, COVID-19 unsettled everything in 2020. The steps employed worldwide to contain the spread of the virus resulted in a roughly 7% decline in carbon emissions for the year. Until February, global carbon emissions were roughly on a par with 2019 levels; by April, emissions fell by nearly 17% YoY; however, by the end of 2Q, emissions were only c4% below 2019 levels as countries began lifting lockdown restrictions (Figure 2). In China, emissions in May overshot the pre-pandemic levels of May 2019.

Figure 2: Annual global CO_2 emissions fell around 7% in 2020 due to the pandemic



Source: Carbon Monitor

There were no official climate negotiations as COP26 was paused to November 2021

Pandemic pause: The pandemic was widely anticipated to shift the focus of governments away from climate change. For example, the annual climate negotiations (COP26) were postponed by a year and with it (unofficially at least) deadlines for Parties to the Paris Agreement to raise commitments. There were a number of (virtual) events throughout the year such as the *Petersberg Dialogue* and the *Climate Dialogues*, although these were high level and not considered "official" meetings of the UN climate process. It also meant they had a lower profile than those of the Conference of the Parties (COPs).

Climate momentum surprisingly picked up in 2020

Major economies announced net zero plans

To the surprise of many, climate pledges continued to be announced (officially or otherwise) throughout the year. The EU planted its flag in the sand early in March by proposing its 2050 carbon neutrality target. Momentum then picked up considerably after September as China announced its aim of carbon neutrality by 2060, quickly followed by Japan and South Korea (both 2050). Although these were all signs of renewed ambition to demonstrate climate leadership and encourage others to do the same, details on achieving these targets were lacking (except for the EU). Importantly in our view, the goals give businesses a long-term signal on the direction of travel.

The US should see a major change in climate direction under President Biden

Climate action was given another boost after the nail-biting US presidential election in November was won by Joe Biden, who will become President on 20 January 2021. He laid out his climate ambitions during the campaign but it remains unclear how much will be achieved given the level of uncertainty in Congress. Nonetheless, the US is widely expected to re-join the Paris Agreement as the Biden-Harris Administration takes office, and also set the US on a net zero pathway, which will invoke more action domestically.

The UK, which will host COP26 in 2021, tried to exude climate leadership by unveiling a Ten Point Plan for a Green Industrial Revolution in November 2020, followed by its first formal standalone NDC (outside of the EU) in December 2020. Formal NDCs (nationally determined contributions) from other Parties were less forthcoming in 2020 with only 43 new NDCs (including the EU), of which only almost 50% (as of 31 December 2020) had raised ambition levels. The EU formalised its "at least 55%" reduction by 2030 after much political wrangling at its budget summit in December.

> **There is at least a one in five chance of it temporarily exceeding 1.5°C by 2024**
>
> **WMO Secretary-General Prof. Petteri Taalas, 2 December 2020**

Although more ambitious pledges were made, we are still not on track….

Climate Ambition only emerged towards the end of the year

The UK hosted a Climate Ambition Summit on 12 December 2020 which resulted in 71 Parties (including the EU which covers 27 EU members) announcing *plans* for strengthened NDCs. However, only 15 Parties (including Argentina and Canada) committed to much stronger pledges. Some 24 Parties aimed for carbon neutrality. Many economies set in motion the transition from brown to green, for example, Pakistan will raise the share of renewables to 60% by 2030, India increased its 2030 renewable energy target to 450GW (from 175GW by 2022) and China raised its target of non-fossil fuel in the primary energy mix to around 25% by 2030 from 20%. The UK, along with France and Sweden announced plans to end international financial support for fossil fuels. However, UN Secretary-General António Guterres said that "it's not enough" and that "we are still on track to an increase of temperature of 3 degrees". The UN Environment Programme also confirmed that the 2030 emissions gap is unchanged by COVID-19 blip.

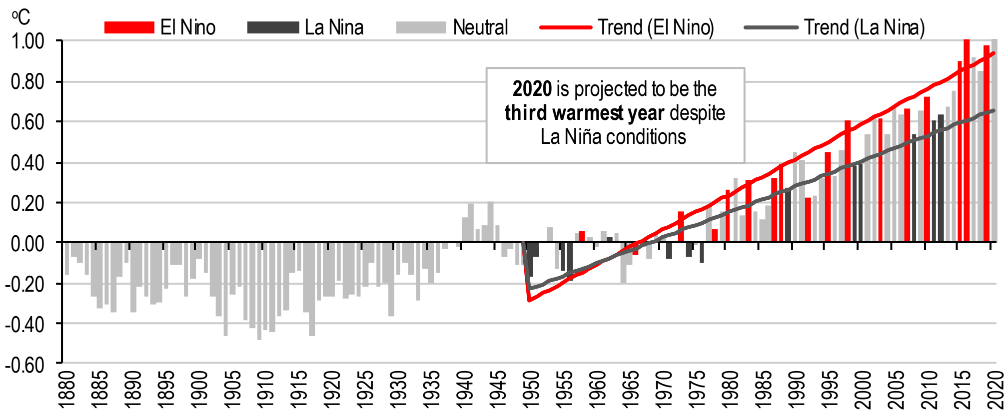
…as warming continues towards 3°C and extreme events wreak havoc

State of the climate in 2020

Meanwhile, extreme events continued throughout 2020, with 30 named hurricanes in the Atlantic, numerous typhoons in Asia and record-breaking wildfires and bushfires across California and Australia. Bushfires have been burning throughout the southern hemisphere summer. 2020 also witnessed over 5,300 cases of floods and nearly 750 cases of drought.

The World Meteorological Organisation (WMO) expects 2020 to be the third warmest year on record (despite La Niña conditions) with the average global temperature around 1.2°C above the pre-industrial average. The decade 2011-20 was the warmest on record. Ocean heat is also at record levels with more than 80% of the ocean experiencing marine heatwaves in 2020. The final WMO State of Climate 2020 will be released in March.

Figure 3: Global Land-Ocean Temperature Index



Source: NASA, NOAA

Anushua Chowdhury and Payal Negi contributed to this report (all employed by a non-US affiliate of HSBC Securities (USA) Inc. and not registered/qualified pursuant to FINRA regulations).

2021 – science and action

- Science will be highly visible as the IPCC publishes AR6 - this should increase pressure on governments to respond with ambition
- Formal climate negotiations will resume with COP26 to tie up loose ends as well as drive the implementation of commitments with action
- Both 2030 and 2050 climate pledges will trickle in throughout the year but all eyes will be on economies that aim for net zero

The official climate process should get back on track in 2021 after taking a backseat to the pandemic and postponements in 2020. The three key events to look out for in 2021 will be:

1. The publication of the IPCC's sixth Assessment Report starting in April
2. The 26th Conference of the Parties (COP26) in November
3. Ongoing submissions of both 2030 NDCs as well as net zero commitments

IPCC AR6: the sixth Assessment Report

AR6 will be released throughout the year….

The UN's climate science body, the IPCC or Intergovernmental Panel on Climate Change, will begin publishing the important working group reports as part of its sixth assessment cycle (AR6) this year.

This sixth assessment cycle[1] has already seen the release of three special reports and a refined methodology. The final reports will consist of:

- **WG I: The Physical Science Basis** (April 2021)
- **WG II: Impacts, Adaptation and Vulnerability** (October 2021)
- **WG III: Mitigation of Climate Change** (July 2021)
- **AR6 Synthesis report** (June 2022)

…the various reports should add to the urgency to act

These will be very important events in the climate calendar as they will cement the role of science in: a) influencing government policy, b) highlighting the urgency of ambitious action.

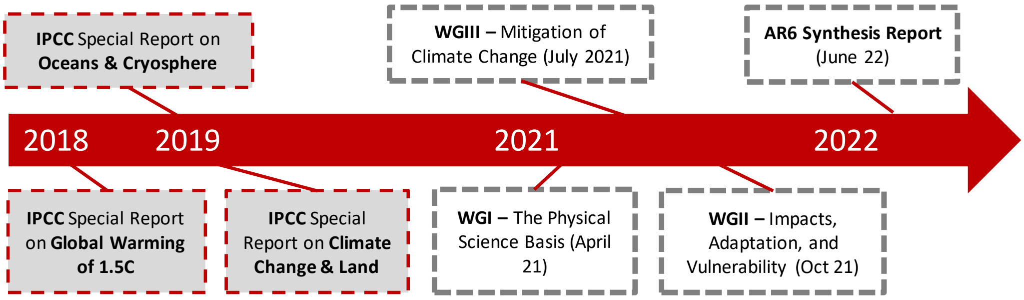
1 https://www.ipcc.ch/assessment-report/ar6/

Box 1: What is the IPCC?

The Intergovernmental Panel on Climate Change (IPCC) was set up in 1988 by two UN agencies (The World Meteorological Organisation, WMO; and the UN Environment Programme, UNEP) to assess the science relating to climate change. It publishes the Climate Assessment Reports every 6-7 years. The previous series of reports was the fifth assessment cycle (AR5) which were published over 2013-14. This upcoming series of reports is part of the sixth assessment cycle (AR6).

The IPCC consists of hundreds of scientists from a wide range of countries. The body does not conduct its own research but instead assesses the latest scientific papers on the topics in question. Lead authors, nominated by countries, lead reviews with many other scientists. Assessments are subject to multiple drafting and reviews before they are adopted by scientists in conjunction with governments.

Figure 4: The timeline for publication of the IPCC's AR6 series of reports



Source: IPCC website

What to look out for from AR6

The rate of change in the climate…

Reports from the IPCC are full of information and run to hundreds of pages. There is always a shorter "summary for policymakers or SPM". Across the series, we think the five key points to look out for will be:

1. How much the climate has changed already and the evidence thereof, also showing the large variation across regions.

…how much are humans responsible for this change…

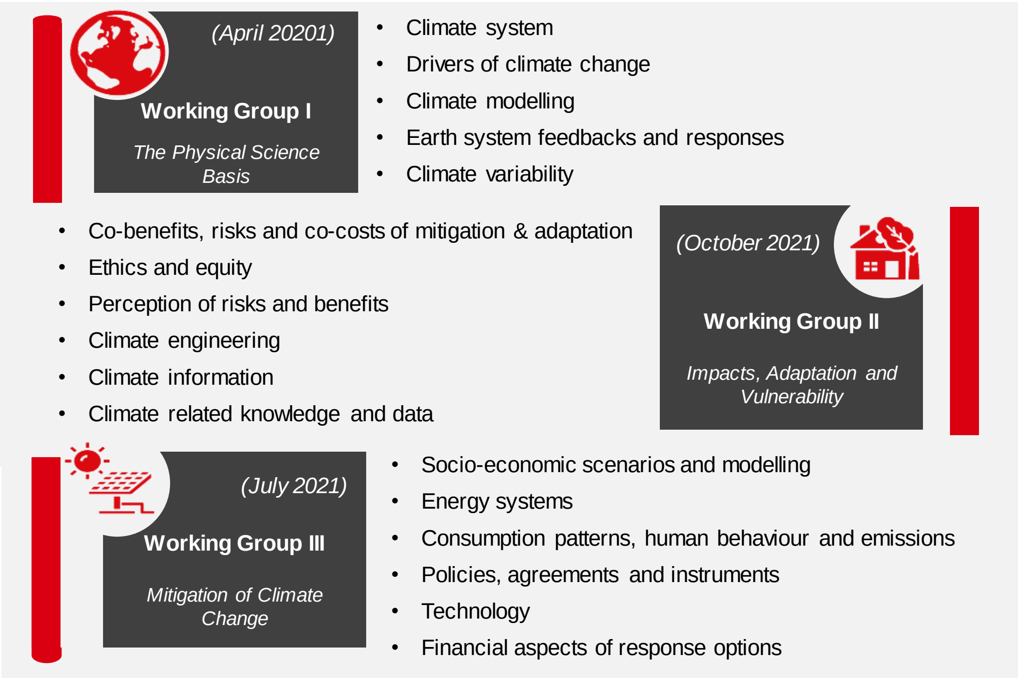
2. The extent of anthropogenic (human) influence on the climate and whether this is accelerating.
3. How much more the climate could change over near-, medium-, and long-term timeframes and the resulting physical impacts.
4. What can be / needs to be done in terms of significant changes in human activities as well as the expected synergies and trade-offs.

…can we slow or halt the change….

5. More colour on the potential social and economic impacts by event, sector, region and the potential adaptation options.

The information contained in these points should guide governments as to the increased urgency of the issue. Investors may assess the speed of the transition and whether industries and geographies are well prepared or not for potential changes.

Figure 5: The IPCC's AR6 will be split into three working groups



Source: IPCC

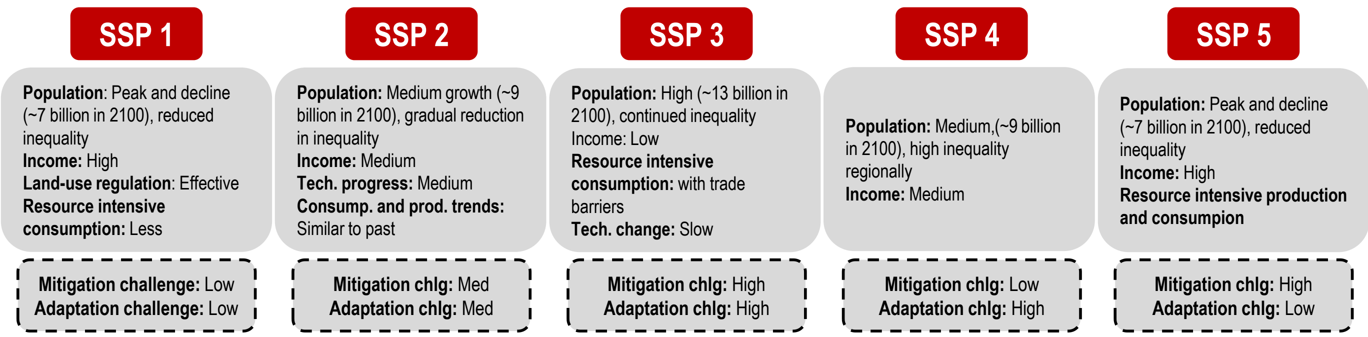
The Fifth Assessment Report (AR5) used emissions via *Representative Concentration Pathways (RCP)* to build future scenarios. AR6 will also use the concept of a *Shared Socioeconomic Pathway (SSP)*.

Box 2: RCPs and SSPs

RCP: There are four Representative Concentration Pathways (RCPs) which are identified by their approximate total radiative forcing in the year 2100 relative to 1750. There is one mitigation scenario, two stabilisation scenarios, and one scenario with very high greenhouse gas emissions, reflecting a range of potential 21st century climate policies.

SSP: AR6 has used the concept of a 'Shared Socioeconomic Pathway (SSP)' in outcomes or models. SSPs are essentially scenarios based on how well or quickly humanity responds to climate change. They are designed to "span a range of challenges to climate change mitigation and adaptation".

Figure 6: Key elements of the various Shared Socioeconomic Pathways being used by the IPCC



Source: IPCC SRCCL SPM

COP26, Glasgow, 1-12 November 2021

The postponed COP26 will take place in November 2021

The supposed 2020 watershed has been drawn out to include 2021. The last climate negotiations, COP25, held in December 2019 left a number of loose ends to be tied up at COP26. The UK will host COP26, in partnership with Italy, in Glasgow in November 2021.

The main formal loose ends to be tied include:

- Article 6 of the Paris Agreement
- Common timeframes of NDCs
- Finance

The longstanding unresolved issue of Article 6 will be important to address

Article 6: There will need to be agreement on **Cooperative Approaches**, the **Sustainable Development Mechanism**, and **Non-market Approaches**. There are strong opposing views on these issues because of how many older (Kyoto) units are held by certain Parties. There are also various technicalities to be ironed out including: double counting, types of emissions credits and possibly adaptation credits.

Common timeframes: These will apply to NDCs from 2031 onwards; however, there is no agreement as to the duration of the NDCs. There are a variety of options ranging from 5 to 15 years with multiple combinations of these as well as the potential return to bifurcation.

Finance: This is always a salient feature of COPs. The UN Secretary General, António Guterres, said in December 2020 that the goal of finance flows of USD100bn by 2020 from developed to developing countries has not been met, and said that this would be negative. In 2021, the UN will publish a report on how far off target this goal is. COP26 is also supposed to agree on a new collective finance goal for the future involving all Parties.

An important COP

COP26 is considered by many to be the most important COP since 2015

Notwithstanding the one-year delay, COP26 is arguably the most important COP since the Paris Agreement was adopted in 2015. This is because it is to focus on raising (post-2020) ambition levels i.e. getting Parties to agree to do a lot more in terms of setting targets and implementing these targets. The UK has already intimated that it would prefer Parties not to bring targets to Glasgow, but to already have ambitious targets in place, and instead to bring real climate actions which help to implement and make progress towards achieving those targets.

The UK has outlined five issues that will be a focus of action at COP26. These are:

1. Adaptation and Resilience
2. Nature or nature-based solutions
3. Energy transition
4. Clean road transport
5. Finance

We expect more focus on these themes from various organisations throughout 2021.

Interim meetings resume: The inter-sessional meetings will also resume as Parties lay out their thinking ahead of the negotiations. The first inter-sessional is scheduled to take place in Bonn (or possibly virtually) from 31 May to 10 June 2021. There will also be meetings of the two subsidiary bodies (SBI for Implementation, and SBSTA for Scientific and Technological Advice). These meetings, known as SB52, were postponed from 2020 with dates for 2021 still to be confirmed (tentatively in June according to the UN website).

Climate pledges: 2030 NDCs and mid-century targets

Many Parties will make climate pledges…but these come in two types

Through 2021, there will likely be a continuous flow of announcements that Parties to the Paris Agreement are enhancing (i.e. upgrading and making more ambitious) their climate pledges; however, it is important to note that there are two main different types of targets:

1) **NDCs or nationally determined contributions** (usually to 2030)

2) **Long-term mid-century targets** (usually by 2050)

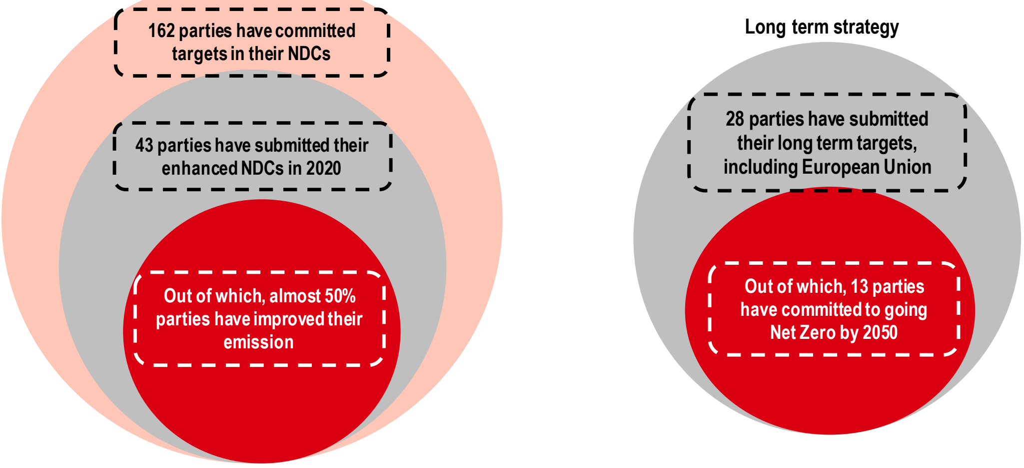
Interim 2030 targets are supposed to be revised "upwards" i.e. strengthened

2030 NDCs

NDCs were supposed to be enhanced in 2020 but the postponement of COP26 and the pandemic meant many Parties will push their submissions to 2021. Although a number of Parties have committed to enhancing their NDCs, only 17 have formally submitted to the UNFCCC. In theory, these new NDCs are only supposed to involve "upward revision" i.e. be more ambitious than previous communications; however, very few have actually increased the magnitude of emissions cuts.

COP26 hosts, the UK, raised its NDC to a 68% reduction in GHG emissions by 2030 from 1990 levels (without offsets). The EU also raised its NDC from a 40% cut to at least 55% by 2030. China increased the non-fossil fuel component of its NDC from 20% to 25%. We expect other Parties to either formally submit or indicate that they will do so throughout 2021.

Figure 7: Enhanced NDC and long-term targets



Source: UNFCCC, HSBC

Only a handful of Parties have set out longer-term strategies

Mid-century targets

Parties to the Paris Agreement were also invited to communicate mid-century, long-term low GHG emission development strategies by 2020 but in total, only around 28 Parties have formally done so (Table 1).

Table 1: Long-term targets proposed by countries in 2020

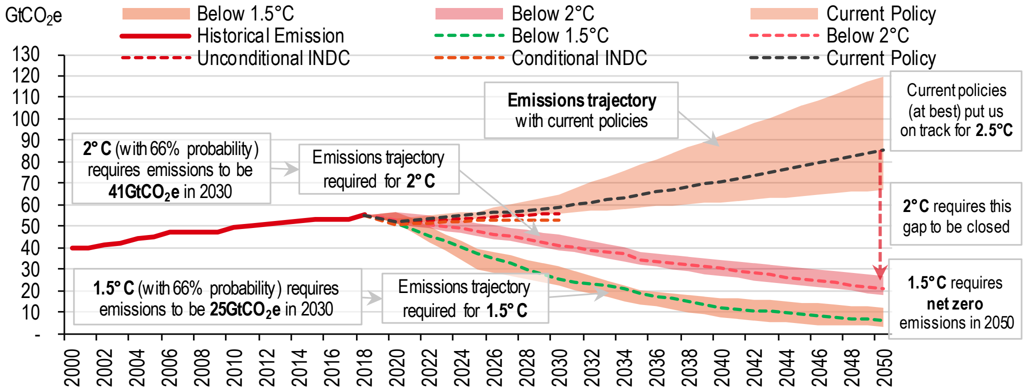
S. No.	Country	Submission date	GHG (incl. LULUCF)	Target	Target year	Base year	Type
1	Republic of Korea	30-Dec-20	670.81	100%	2050	-	Absolute
2	Denmark	30-Dec-20	45.11	100%	2050	-	Absolute
3	Sweden	11-Dec-20	44.66	100%	2045	-	Absolute
4	Netherlands	11-Dec-20	184.19	95%	2050	1990	Absolute
5	Austria	11-Dec-20	72.79	100%	2050	-	Absolute
6	Belgium	10-Dec-20	105.53	100%	2050	-	Absolute
7	Spain	10-Dec-20	299.35	90%	2050	1990	Absolute
8	Latvia	9-Dec-20	-2.42	100%	2050	-	Absolute
9	Norway	25-Nov-20	23.88	90% – 95%	2050	1990	Absolute
10	Finland	6-Oct-20	59.85	87.5% - 90%	2050	1990	Absolute
11	South Africa	23-Sep-20	515.8	100%	2050	-	Absolute
12	Singapore	31-Mar-20	66.15	33 MtCO2e	2050		Absolute
13	Slovakia	30-Mar-20	35.38	90%	2050	1990	Absolute
14	European Union	6-Mar-20	3201.6	100%	2050	-	Absolute

Source: UNFCCC, WRI CAIT

All pledges need to be stronger to close the emissions gap

Do these pledges close the Emissions Gap? According to the UN Environment Programme's (UNEP) 2020 Emissions Gap Report, the world is "absolutely not" on track for bridging this gap with either current policies, unconditional or conditional climate pledges. However, there is potential for this gap to narrow with more ambitious decarbonisation policies as part of the global economic recovery from COVID-19 as well as mid-century net zero goals, if implemented. If the US follows through with its net zero pledge, UNEP projects temperatures to rise 2.5°C to 2.6°C by century-end.

Figure 8: Current pledge are still far off from closing even the 2°C emissions gap



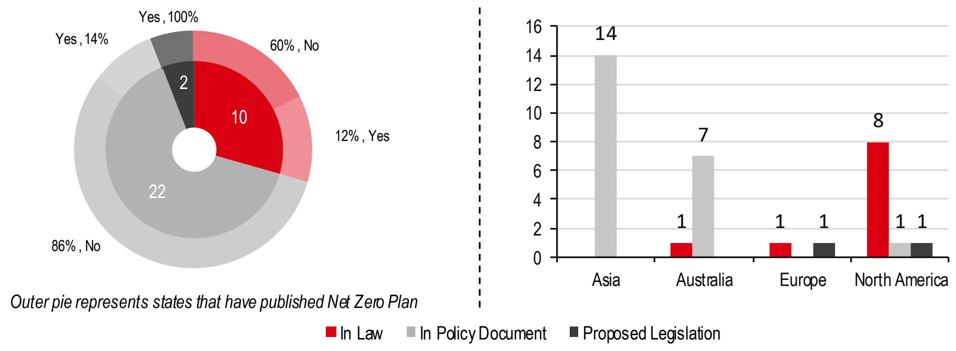
Source: HSBC (based on UNEP Emissions Gap Report 2020)

The rise of net zero emissions

Net zero means a balance between sources and sinks of GHG emissions

Although long-term strategies with emissions targets are also "nationally determined" i.e. it is for the Party to choose "how much to reduce", there is growing pressure on all Parties for the long-term target to be net zero. Indeed, the UNFCCC has set up a *Race to Zero Campaign* to mobilise Parties but also non-state actors (cities, regions, businesses, etc.) to commit to achieving net zero emissions by mid-century.

Figure 9: States which have made net zero commitments



Source: Energy and Climate Intelligence Unit

More Parties are committing to net zero by mid-century

Some eight Parties (Japan, South Korea, China, UK, New Zealand, EU, Canada, Costa Rica) have publicly announced net zero goals (note: this does not equate to a formal submission to the UNFCCC) with many more considering such a target. At the Climate Ambition Summit in December 2020, 24 Parties announced plans to target net zero emissions or achieve carbon neutrality. We highlight some net zero goals below.

The **UK** became the first major economy to legally bind the net zero pledge by 2050. It has since followed up with a new 2030 target of 68% as well as actions on how net zero could be achieved.

The EU presented the most detailed plan on how net zero target would be achieved

The **European Union** is aiming for carbon neutrality by 2050. The target is legally binding and will further shape transition for all sectors across the economy to achieve the net zero target.

New Zealand sought to achieve net zero emissions by 2050 as part of their *Climate Change Response (Zero Carbon) Amendment Act 2019*, where net GHG emissions should be zero except emissions for biogenic methane. The country declared a "climate emergency" in December 2020.

China's plan is hugely significant but details are lacking

China aims to attain net zero emissions by 2060 but without any further details. The main focus of the country should be a moving away from coal-based power generation.

Japan announced a pledge to attain net zero emissions by 2050 but without further details on how this will be achieved.

South Korea "will move towards the goal of becoming carbon neutral by 2050", the President announced to the National Assembly in October 2020.

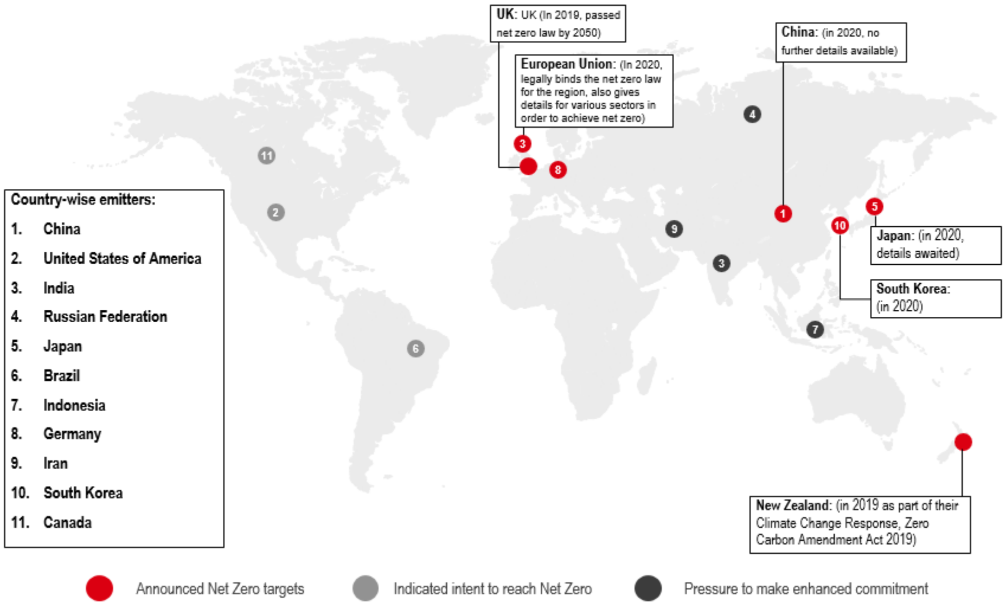
Canada indicated a 2050 net zero target in 2019 and formally tabled *Bill C-12, An Act respecting transparency and accountability in Canada's efforts to achieve net-zero greenhouse gas emissions by the year 2050* in November 2020.

All eyes on the US to set a net zero target this year

The **United States** is widely expected to commit to a 2050 net zero target in the near future under the incoming Biden-Harris Administration. President-elect Biden campaigned on such a pledge in last year's election.

Brazil announed an "indicative" net zero goal for 2060 (same target year as China) in December 2020 although it came with financing and carbon offset conditions.

Figure 10: The world's top emitters are steadily committing to net zero targets



Source: HSBC, WRI CAIT (GHG emissions (excl. LUCF) in 2016)

Many large emitters are yet to take the net zero plunge

In a speech in late early December 2020, UN Secretary General, António Guterres, called out certain countries for their lack of a public commitment. We expect more announcements in 2021, especially from smaller emitting economies; however, the real pressure will be on large emitters such as India, Russia and Indonesia.

Seven other issues to watch

- The adoption of TCFD into reporting frameworks will continue as carbon pricing marches onwards, pushed forward by net zero goals
- We think the politics of 2021 will be less transformative but China's 14FYP and the European Green Deal will be important markers
- We expect an ongoing slew of net zero announcements by corporates in 2021 with many of these considering carbon capture and storage

Seven other issues to watch in 2021

Besides a resumption of the UN's climate process, we think there are several other key issues to watch in 2021 as global climate momentum picks up again through (and beyond) the pandemic. These include: the wider adoption of TCFD and carbon pricing, China's 14FYP and the realignment of the G7 and the G20, the ongoing advancement of the European Green Deal, as well as more corporate climate pledges and more talk of carbon capture.

A focus on TCFD

The **Task Force on Climate-related Financial Disclosures** (**TCFD**) was established in 2015 at COP21 with the aim of developing voluntary and consistent disclosures on information related to climate-related financial risks.

Uptake of TCFD should continue to increase in 2021…

Strong participation: As of October 2020, TCFD had support from over 1,500 organisations representing over 1,340 companies with a total market capitalisation of USD12.6 trillion and financial institutions with assets under management of USD150 trillion. Several regulators, government agencies and central banks have spurred the of adoption of TCFD for improved disclosures. TCFD has support from over 110 regulators and governmental entities, including the governments of Belgium, Canada, France, Japan, and the UK. The European Commission also incorporated the recommendations in its climate-related reporting requirements.

Harmonising standards: Key sustainability standard setters such as CDP, CDSB, GRI, IIRC, SASB clubbed together in 2018 under the Better Alignment Project with the aim of aligning not only their own frameworks but also with TCFD.

…as more regulators and organisations incorporate its disclosure regime

Investor involvement: In February 2019, the Principles for Responsible Investment (PRI) announced that incorporating TCFD recommendation would be mandatory for investor signatories from 2020. Figures from the PRI's 2020 climate snapshot show that three-quarters of the signatory base did so in 2020.

Stock exchanges: There are a growing number of major exchanges around the world seeking to incorporate TCFD recommendations into their own disclosures for listed companies. For example:

Hong Kong – The Hong Kong Exchange along with the regulator, the Securities and Futures Commission have made it clear that they would try to align their climate disclosures with TCFD recommendations.

Malaysia – Bursa Malaysia is seeking to encourage more alignment with the low-carbon economy by supporting TCFD recommendations for listed issuers.

London Stock Exchange Group – aligned its updated ESG guidance in line with TCFD.

TCFD will become mandatory across the UK economy in the coming years

In November 2020, the **UK Government** announced that *it was making climate disclosures mandatory* across the economy through the TCFD framework. It would be applied in stages depending on the type of company:

- Listed commercial companies: 2021 (66%), 2022 (100%) subject to market cap
- Large private companies: 2021/22 (50%) subject to revenues
- Banks and building societies: 2021 (57%), 2022 (94%) subject to balance sheet assets
- Insurance companies: 2021 (63%), 2022 (89%) subject to balance sheet assets
- Asset managers: 2022 (75%), 2023 (96%) subject to AUM
- Pension schemes: 2022 (89%), 2023 (98%) subject to asset value

The UK Government will work with relevant regulators to implement the appropriate legislation to ensure consistency and comparability as well as give guidance in the coming years, starting in 2021.

We expect more regulators and other relevant organisations to incorporate TCFD recommendations in their guidelines in the coming years.

Carbon pricing – more important in a net zero future

The advance of net zero economy will drive carbon pricing

Carbon pricing is a mechanism that tries to capture the **external costs** of greenhouse gas (GHG) emissions. As countries update NDC climate pledges and step-up their climate actions, we expect carbon pricing to play a growing role in enabling the transition to a low-carbon or net zero economy. According to the World Bank's State and Trends of Carbon Pricing 2020, some 61 carbon pricing initiatives, including 31 emissions trading and 30 carbon taxes, have been implemented or scheduled, covering just over one fifth of global GHG emissions.

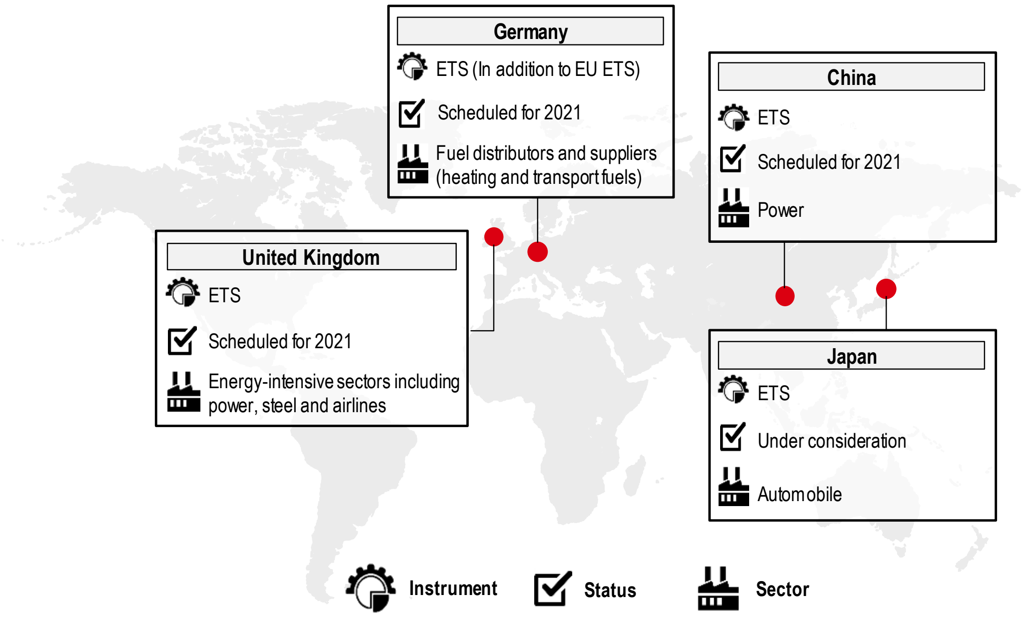
The UK's ETS is designed to fill in the gap left by Brexit

Upcoming carbon pricing schemes in 2021

The **UK** is expected to launch carbon pricing initiatives in 2021. Its *Greenhouse Gas Emissions Trading Scheme Order 2020* came into force on 12 November 2020. It sets out the framework for the UK's standalone emissions trading scheme, a UK ETS, now that the UK has exited the EU ETS. It will include aviation activities (covering domestic and European Economic Area flights) but not maritime activities.

In the **US**, the House Select Committee on Climate Crisis' report states "*Congress should establish a carbon pricing system designed to achieve America's economy-wide greenhouse gas emissions reduction goal of net-zero by no later than 2050*." However, we do not expect President-elect Joe Biden to make federal carbon pricing a priority during his first term because of other decarbonisation priorities such as clean energy investments and efficiency as well as the uncertainty over the ability to push such an initiative through Congress.

Figure 11: Major upcoming carbon pricing initiatives in 2021



Source: International Carbon Action Partnership, Fitch Ratings, Nikkei Asia

China's national ETS should relaunch in 2021, meanwhile regional pilot schemes continue

China intends to (re)launch its national emissions trading scheme in 2021, especially in light of the net zero goal by 2060. In its *Guiding Opinions to address climate change* from October 2020, the Ministry of Environment and Ecology indicated its intent to further establish a national carbon trading scheme and improve carbon accounting. It is likely to cover only the power and heat generation sector at first. The various regional schemes will continue to operate alongside the national scheme.

The EU will propose its carbon border tax in 2021

Europe will also propose a Carbon Border Adjustment Mechanism (CBAM) in the first semester of 2021, with a view to introduction "at the latest by January 2023."

Figure 12: Possible features of a European CBAM

EU Carbon Border Adjustment Mechanism (possible features)	
Rationale	↓ Carbon Leakage — Transfer of products / economic activity from countries / jurisdictions with stricter to weaker emission regimes
Possible Application	Exports; Imports; Both
Possible Mechanism	Tax on imports; Extension of the ETS to imports; Allowance purchase outside the ETS; carbon tax at consumption level
Scope / Benchmarks	EU ETS And / Or Value chain emissions; How to determine carbon content
Possible impacts	Economic; Environmental; Social; Administrative
Other issues	Verification procedures; Anti-circumvention mechanisms; Exceptions

Source: HSBC (based on European Commission)

China and its 14th Five-Year Plan

One of the most significant policy events in 2021 in our view is the unveiling on China's 14th Five-Year Plan (14FYP) which will cover the 2021-25 period. It will be adopted in March at the National People's Congress meeting.

China's 14FYP may offer more direction on how it intends to achieve carbon neutrality

The 14FYP should provide more details on how China intends to implement its September 2020 announcement of achieving carbon neutrality by 2060. Besides details on economic targets and sectoral strategies, for climate change, we think the most important data point would be whether or not China sets a cap on GHG emissions. Any potential cap would then filter down through provinces as well as industries – with the potential to reduce this cap over time.

Besides a cap, we expect many other details on climate-related issues, such as targets on renewable energy capacity, the electrification of transport, greening industries, energy efficiency and other related goals to be unveiled.

The climate of politics

Whilst the major political event of 2020 was the US presidential election with its binary implications for climate change, politics in 2021 should prove less binary, rather just affecting the speed of policy implementation.

Germany will hold federal elections in September 2021 to decide who will succeed Chancellor Angela Merkel who has been instrumental in domestic (and EU level) climate and energy policies. The next Chancellor would oversee Germany's domestic emission reduction efforts. We do not expect the elections to significantly shift the climate trajectory of Germany or the EU.

Japan will hold an election a year after announcing net zero plans but we do not expect any major changes

Japan will hold a general election in on or before 22 October 2021 as the current term of the House of Representatives expires. Although we are not expecting any major upsets, Prime Minister Yoshihide Suga of the Liberal Democratic Party (LDP), who has only been leader since September 2020, has been instrumental in making Japan a part of the net zero club.

Other international fora should also see a shift in favour of climate policies in our view. The **G7** has almost become the "G6+1" over the past four years as climate messages always noted the exception of the US. The **UK has assumed the presidency of the G7** as of January 2021. While the UK's priorities during its G7 presidency are still to be finalised, climate change is likely to feature high on the agenda, especially as the UK will also host COP26 in November. We note that indicative focus areas such as health, economic recovery, and food security and nutrition already contain a strong climate element.

We expect the G7 and G20 to be more vocal on climate change

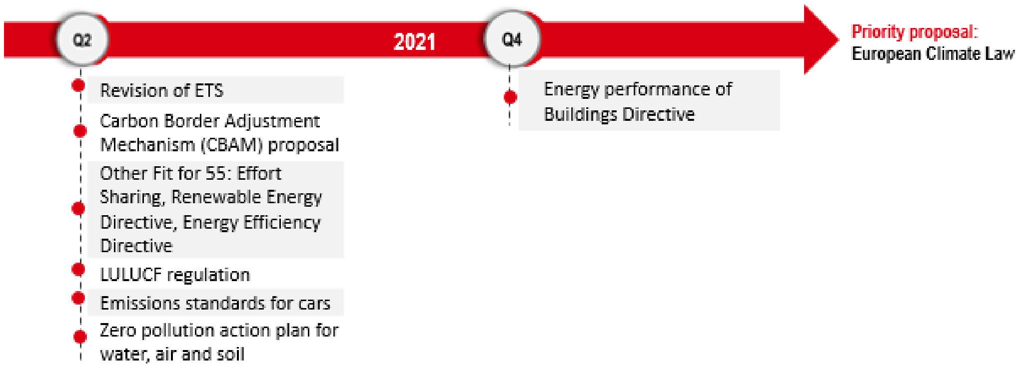
Similarly, **Italy assumed the presidency of the G20** in December 2020. Italy's G20 agenda is focused on People, Planet, Prosperity and it has stated that it hopes to lead the international community ahead to face the challenges of pandemic recovery and climate change amongst others. The Leaders' Summit will be held in Rome, Italy on 30-31 October 2021.

European Green Deal in 2021

The EU intends to update various policies to be in line with its 2030 and 2050 goals

2020 saw the advancement of many parts of the European Green Deal. Similarly, 2021 will see additional strategies proposed and released – many of these are related to climate change. For example, the "Fit for 55 package", to be unveiled throughout 2021, will cover elements such as: revisions to the EU ETS, the proposal for a Carbon Border Adjustment Mechanism, effort sharing and regulations surrounding land use change.

Figure 13: Key climate-related policy amendments under the European Green in 2021



Source: EU Commission, HSBC

Corporate net zero targets

In our view, investors should scrutinise corporate net zero targets carefully

Besides countries (Parties to the Paris Agreement), many corporations are also making pledges to be net zero in the future. **Not every net zero target is the same**. Some companies have mentioned the use of carbon offsets whereas others choose other means for carbon dioxide removal.

Net zero current emissions (just buying offsets): to claim net zero tomorrow, a company would only need to know its annual emissions and offset these using carbon credits; however, we do not believe this would be in the spirit of truly becoming net zero.

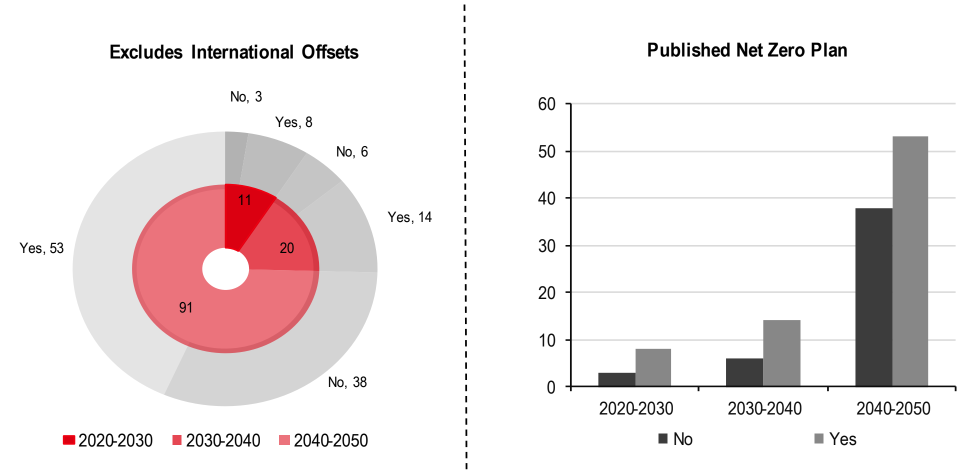
Net zero as a transition: other companies may use offsets as part of their transition whilst they await technological or process advancements which will allow them to become lower or zero carbon.

"Net zero" can be interpreted in different ways

Net zero as a final offset for residual emissions: this is where a company reduces all corporate emissions over time through changes to processes and products, and then, if and only if, there are completely unavoidable residual emissions, offsetting these.

Beyond net zero: this involves using carbon dioxide removal technologies (natural or technological) to remove all emissions ever emitted by a corporate entity – and going beyond this to become "carbon negative".

Figure 14: Net zero commitments of some major companies



Nearly **1,500 companies**, representing over USD 11.4tn revenue have committed to net zero targets. The top three sectors are - consumer discretionary (195 companies), industrials (171 companies), and industrials (services) (128 companies)

Source: Energy and Climate Intelligence Unit, Data-Driven EnviroLab & NewClimate Institute.

We expect a continuation of corporate net zero announcements throughout the year, especially in the run-up to COP26 in November.

Expect to hear a lot more about Carbon Capture and Storage (CCS) in 2021

Many net zero targets are likely to require the use of CCS

Withholding emissions: Whilst achieving zero emissions would be ideal, this is just not feasible in some industries where CO_2 free processes are yet to be formulated or commercialised. For other industries, there will be residual emissions and indeed transition emissions in the coming decades. GHGs only cause radial forcing when they reach (and stay in) the atmosphere and so capturing these emissions and preventing them from entering the atmosphere is a potential mitigation option.

As companies increasingly set net zero targets, we expect to hear a lot more about carbon capture and storage (CCS). Indeed, the IEA estimates that even to limit warming to within 2°C, CCS would need to be responsible for almost one seventh of global GHG emissions reduction through to 2050.

Store or use: CO_2 emissions can be separated from other types of emissions in certain industrial processes such as power generation or steel and cement production, and then captured for storage deep underground in salt-water reservoir or depleted oil and gas reservoirs. There are also options to use the CO_2 in other industries such as food and beverages (for carbonated drinks), cement (for production of cement and aggregates), as well as oil and gas (for enhanced oil recovery). This gives rise to the term Carbon Capture, Use and Storage (CCUS). Apart from the deep-decarbonisation of hard-to-abate sectors, CCS can also enable the production of low-carbon hydrogen.

Governments are releasing funding for CCS…

Box 3: Recent CCS announcements

In November 2020, as part of its Ten Point Plan for a Green Industrial Revolution, the **UK** targets removing 10MT of CO_2 by 2030. **Australia** identified CCS as a priority low-emission technology in its First Low Emissions Technology Statement 2020. **Canada** is also developing a Clean Fuel Standard (CFS), a market-based credit system which includes CCUS as a credit creation option. **Norway** unveiled the USD3bn 'Longship' CCUS project in September 2020. Oil majors **BP, Eni, Equinor, Shell, Total**, and **National Grid** are collectively developing offshore CO_2 transport and storage infrastructure in the North Sea.

…however cost and permanence issues must be overcome

Commerciality challenge: CCS is currently a high-cost endeavour and does not generate revenue if there is no carbon price (carbon prices are currently well below the CCS cost) or if there is muted demand for CO_2. As CO_2 must remain locked away for at least 100 years in order to have efficacy, there is also the potential risk of leakage.

According to the Global CCS Institute, there currently are 26 operational CCS facilities globally, with three under construction, 13 in advanced development and 21 in early development. We expect many more countries and companies to work towards the commercialisation of CCS in the coming years.

Conclusion

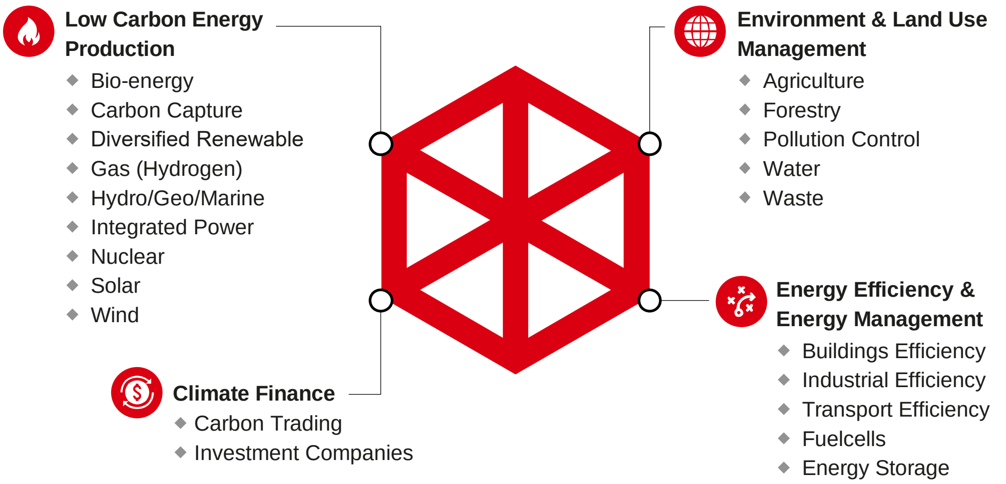
After the unexpected year that was 2020, momentum on climate action picked up towards the end of the year. We anticipate this momentum to continue in 2021 as the pandemic has become "normal". Although green recovery has not been as sharp as it could be, major economies are seeking to be leaders – the EU will continue unveiling the next proposals of its European Green Deal, China will unveil its all-encompassing 14th Five-Year Plan, and the US will be seeking a return to climate leadership. In our view, this momentum will be carried by other economies but especially the corporate sector in the coming year. We think investors should prepare for an acceleration in the speed of transition towards low and zero carbon economies as more pledges are made, disclosures improve and net zero emissions become the norm.

Appendix 1: HSBC Climate Solutions Database and Framework

The HSBC Climate Solutions Framework is designed to screen and analyse companies that are focused on addressing, combatting and developing solutions to offset and overcome the effects of climate change, thus enabling the transition towards a low-carbon economy. The framework identifies companies across four climate sectors and 21 climate themes, over 75 climate sub-themes and over 125 fourth level classifications. The first two levels of classification are outlined below. It is a dynamic framework wherein the new technologies and solutions in climate change space are constantly added to keep it upgraded with latest developments.

HSBC Climate Solutions Framework

The HSBC Climate Solutions Framework is a robust tool-kit that identifies companies offering solutions to environmental and climate change risks.



Source: HSBC

HSBC Climate Solutions Database

The ***HSBC Climate Solutions Database*** is the outcome of applying the HSBC Climate Solutions Framework on the universe of global stocks and it defines an investment opportunity-set within the global climate change space. The Database was launched in 2007 and currently consists of over 3,000 global companies across all major regions and markets. The climate exposure of companies in the HSBC Climate Solutions Database is determined based on the proportion of revenues that these companies derive from climate change-related solutions as defined by the HSBC Climate Solutions Framework.

The database allows the identification of trends in climate integration across various climate themes as well as across regions and countries. It therefore enables screening for markets based on their highest and lowest share of climate revenue as proportion of macroeconomic variables, such as GDP. It also helps in identifying countries with relatively higher or lower rate of change in climate integration compared to other markets.

Access: *If you would like to find out more, please contact AskResearch@hsbc.com*

The global climate calendar: upcoming events

2021	Location	Event
07-15 January	Marseille, France	IUCN World Conservation Congress
25 January	Virtual	Climate Adaptation Summit
08-12 February	Rome, Italy	47th Session of the Committee on World Food Security
22-26 February	Nairobi, Kenya	Fifth Session of the UN Environment Assembly
08-12 March	Virtual	7th Asia-Pacific Adaptation Forum
12 April	TBD	60th Session of the IPCC Bureau
13-18 April	TBD	54th Session of the IPCC and WGI- AR6 Approval Plenary
TBD May	Germany	12th Petersberg Climate Dialogue
17-19 May	Berlin, Germany	UNESCO World Conference on Education for Sustainable Development
17-30 May	Kunming, Yunnan, China	UN Biodiversity Conference
25-27 May	Tours, France	Climate Change and Water 2021: Extreme Events
31-May – 04 June	Europe	EU Green Week 2021
02-06 June	Lisbon, Portugal	UN Ocean Conference
20-21 September	Paris, France	Euro-Global Climate Change Conference (EGCCC 2021)
18-19 October	Rome, Italy	10th World Conference on Climate Change
30-31 October	Rome, Italy	G20 Italia 2021
01 – 12 November 2021	Glasgow, Scotland, UK	26th Conference of Parties (COP 26)
06-07 November	Glasgow, UK	2021 Global Conference on Health and Climate Change
TBD	Beijing, China	UN Global Sustainable Transport Conference
TBD	United Kingdom	47th G7 2021

Source: HSBC

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