

GHG Market Sentiment Survey 2023



This year's key findings:

- 1. Bullish sentiment on global carbon prices remains. While respondents expected prices to rise across all systems, the extent to which they are expected to rise is less than in previous years. The bullish sentiment expressed in the 2022 and 2021 surveys remains, with a long-term trend of rising prices across the world's carbon markets.
- 2. Participants expect the European Commission will set an ambitious emissions reduction proposal for the EU 2040 climate target. Nearly half (46%) of respondents anticipate that the European Commission will propose a 75% or greater emissions reduction target.
- 3. While the state programmes in the US undergo review, participants anticipate the extension of the California cap-and-trade programme beyond 2030. The majority of respondents (68%) expect the California cap-and-trade programme to continue beyond 2030. Additionally, 62% of respondents were unsure which scenario is most likely to be adopted by the end of the Review Process, which is scheduled for late 2023.





In association with

Executive summary:

- 1. Participants expect that the European Commission will set an ambitious emissions reduction proposal for the EU 2040 climate target. Nearly half (46%) of respondents anticipate that the European Commission will propose a 75% or greater emissions reduction target.
- 2. Respondents anticipate the implementation of the revised EU ETS Directive will be the primary driver of price changes in the EU's carbon market. Respondents identified the implementation of the revised EU ETS Directive and setting the bloc's 2040 climate target as the two main factors that will influence the future EU ETS carbon price.
- 3. While the state programmes in the US undergo review, participants anticipate the extension of the California cap-and-trade programme beyond 2030. The majority of respondents (68%) expect the California cap-and-trade programme to continue beyond 2030. Additionally, 62% of respondents were unsure which scenario is most likely to be adopted by the end of the Review Process, which is scheduled for late 2023.
- 4. Participants expect Japan's GX league voluntary carbon market to transform into a compliance ETS. Japan's Green Transformation (GX) League, a voluntary carbon market for Japanese companies, outlines a road map for carbon pricing, including proposals for a mandatory ETS starting in 2026. The majority of respondents (69%) expect the GX League to evolve into a mandatory compliance mechanism by 2026.

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- 5. There is growing positive sentiment for the development of carbon pricing mechanisms in Latin America. There has been a noticeable shift in sentiment towards Brazil developing a carbon market, with the majority of respondents (57%) anticipating the launch of an ETS by 2026. Repondents also anticipate Chile (47%) and Colombia (43%) are likely to launch operational ETSs by 2026.
- 6. Bullish sentiment on global carbon prices remains. While respondents expected prices to rise across all systems, the extent to which is less than in previous surveys. The bullish sentiment expressed in the 2022 and 2021 surveys remains, with a long-term trend of rising prices across the world's carbon markets.
- 7. The voluntary carbon market (VCM) is expected to be able to accommodate the growth in companies' net zero commitments and pledges to reduce emissions by 2030. Consistent with last year's results, 71% believe that the VCM will be able to accommodate the growth in demand. However, respondents noted concerns over the quality of credits available for offsetting.
- 8. The Article 6.4 crediting mechanism is expected to be fully operational between 2026 and 2028. The majority of respondents (74%) anticipate that the Article 6.4 crediting mechanism will be fully operational by 2028.

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About IETA

The International Emissions Trading Association (IETA) is a non-profit business association with a membership of over 300 leading international organisations operating in compliance and voluntary carbon markets. Since its foundation in 1999, IETA has been the leading voice of business on marketbased ambitious solutions to climate change. We are a trusted adviser to governments to support them build international policy and market frameworks to reduce greenhouse gases at lowest cost, increase ambition, and build a credible path to net-zero emissions. See www.ieta.org for more information.



Message from President and CEO of IETA

The last three years have seen the world grapple with a global pandemic and then the onset of geopolitical turmoil and war, yet carbon markets have not been diverted from their determination to produce the low-carbon future that we need.

In my foreword to last year's GHG Market Sentiment Survey, I traced a line from the optimism that characterised the world's emergence from the Covid-19 pandemic in 2020 to the resolve that governments displayed in their determination to drive the transition to a low-carbon future in the face of conflict and geopolitical turmoil.

When the 2022 edition of this survey was published the European Union was in the midst of negotiating the most thoroughgoing reform of its carbon market.

Now that the completed "Fit for 55" package is entering into law, it's clear that policymakers grasped the opportunity to demonstrate that resolve, and the market has responded by demonstrating its resilience in the face of wider challenges.

Prices for EU Allowances topped the psychologically important €100 barrier for the first time in February as the regulatory process entered its final stages, and it can't be a coincidence that across the Channel, the UK's carbon price slumped against its European counterpart as the process to reform the British market has been delayed.

Likewise in the US, prices in the main California and RGGI markets have also slipped back in the last few months as traders weigh the prospects of ambitious reforms currently being discussed in Sacramento and in state capitals on the east coast.

These reactions to political discussions are clear and instructive evidence that renewed and increased ambition will drive these markets to achieve the emission reductions that we need to reach the Paris goals. If regulators and politicians take the steps necessary to boost ambition, the market will respond and abatement will grow.

This year's survey has produced the first decline in predicted prices since 2019 for all the main compliance markets. The declines reflect a downward shift in macroeconomic sentiment as well as some regional policy uncertainty. However, as a side-note, it is worth noting that our respondents expect only a 1% drop in EU carbon prices this year, underlining the value of regulatory certainty in emissions markets. In other markets, the theme of policy certainty prevails, such as China where there is still debate over when and how far to extend the nationwide ETS and when to impose an absolute limit on emissions, and in Australia, where there remains a strong constituency calling for an explicit price on carbon despite recent advances.

In Africa, Southeast Asia and Latin America our respondents had a wide variety of views on when compliance markets would begin to emerge, underlining the challenge that governments have in meeting domestic targets while waiting for clarity to emerge on the international policy front.

The voluntary market too has navigated some fairly choppy waters in the past few months, yet anecdotal evidence continues to demonstrate how many more private sector entities are pledging to take action to address their internal greenhouse gas emissions, and how innovation and investment are still being brought to bear.

Our survey respondents expressed strong confidence that the voluntary market has the capacity to scale up to meet the potential additional demand over the rest of this decade, and while some benchmark prices for carbon offsets are expected to end 2023 weaker than where they started it, there is still underlying optimism.

So while the last two years have been characterised by optimism and resolve, it's clear now that the market is developing the resilience it needs to get through the process of building international frameworks, supporting more countries as they work to implement their own mechanisms, and building the scale that we need to draw more of the world into a network of carbon pricing systems that will deliver the low-carbon future.

Will Storing

Dirk Forrister President and CEO of IETA

This year's IETA greenhouse gas (GHG) Market Sentiment Survey reflects key issues and developments in GHG markets since COP27 against a backdrop of political uncertainty and economic volatility. We designed the survey to assess key dimensions of market sentiment, such as future price and policy expectations. The survey was conducted among IETA members, with more than one response per organisation possible, and was open from 06 to 28 April 2023.

We received responses from 187 IETA member representatives from a broad range of locations and organisations. Multiple responses were provided by some member companies. Participants were given some freedom to select which sections and topics they answered, and therefore some statistics are based on samples smaller than 187. This report consists of seven sections, which reflect the key areas of focus for carbon markets over the past year:

- 1. European Union and the United Kingdom
- 2. China and Asia-Pacific
- 3. Latin America & Caribbean
- 4. North America
- 5. Middle East and Africa
- 6. Price trajectories
- 7. Voluntary Carbon Markets (VCM)
- 8. UNFCCC Negotiations



Figure 2: Type of IETA organisations responding to the survey



Figure 1: Location of survey respondents

1. European Union and the United Kingdom



Figure 3: Average carbon price expectations for the EU ETS over successive surveys

Respondents remain optimistic for price growth in the EU ETS over the next decade

Despite significant volatility, prices in the EU ETS continued to rise over the past 12 months. Against the backdrop of an energy crisis and negotiations on the "Fit For 55" package, European Union Allowance (EUA) prices increased 8.6% between June 2022 and May 2023, peaking at €100.34/tCO2 in February 2023¹. Respondents remain optimistic for price growth, with average EU ETS price predictions over the next decade higher than €90.00/tCO2 – significantly greater than the 2022 average market price of €80.82/tCO2.

However, reflecting on how EUA price sentiment has evolved year on year, some evidence of stabilisation is apparent. In last year's survey, participants predicted the average price for the EU ETS Phase would be &85.45/tCO2 (2021-2025) and &99.69/tCO2 (2026-2030), whereas, in this year's survey, participants are anticipating a price of &84.40/tCO2 between 2022-25 and &100.00/tCO2 between 2026-2030. The steady rise in EUA prices and increased confidence in the market have come as the EU prepares to implement a suite of policy changes agreed in December 2022 and confirmed in April 2023 in the European Parliament and Council. Changes to the EU ETS, allowing the EU's carbon market to deliver its fair share of emission reductions and contributing to the increased 2030 climate target, include: increasing the linear reduction factor, re-basing the cap, and updating the Market Stability Reserve (MSR), amongst others. All of these measures underpin a tightening of the overall emissions cap.

Respondents identified the implementation of the revised EU ETS Directive and setting a 2040 climate target as the two main drivers behind the future EU ETS carbon price. This is consistent with last year's survey, where respondents identified the implementation of the EU's "Fit for 55" legislative proposals as a key driver behind future price changes under the EU ETS. Furthermore, at the end of March 2023, the European Commission launched a public consultation for the EU's 2040 climate target. Nearly half of respondents (46%) anticipate the European Commission will propose a 75% or greater emission reduction target. The outcome of this process is expected in May 2024.



Uncertainty remains whether the EU's main trade partners will establish Border Carbon Adjustment programmes in the next five years

In April 2023, following years of planning and negotiations, the European Parliament and Council approved the regulation establishing the EU's Carbon Border Adjustment Mechanism (CBAM)². It will apply to imports of aluminium, cement, iron and steel, electricity, fertilisers and hydrogen into the EU, with the transitional phase commencing in October 2023. The principal aim of the CBAM is to prevent carbon leakage but also to encourage comparable levels of climate action globally, particularly with respect to internationally traded emissions-intensive products.

Respondents remained split over whether EU trade partners would respond to the CBAM by establishing their own border carbon adjustments in the next five years, showing similar sentiment to last year. This year 41% anticipate that they will, 33% are unsure, and 26% disagree. Notably, respondents highlighted China, the United States, Canada and the UK as the trade partners likely to establish a Border Carbon Adjustment mechanism in response to the EU's CBAM.

The integration of carbon removals into the EU ETS is anticipated in the next decade

In November 2022, the European Commission published a proposal for a carbon removal certification framework (CRCF). In light of this announcement, 61% of respondents expected the integration of carbon removals into the EU ETS. Of those anticipating the integration, 48% expect it to happen before 2030. This is a sizable decrease from last year's survey, where 65% anticipated the integration would take place before 2030. Additionally, respondents were split on whether it should include technology- and nature-based removals or solely technology-based ones.

The integration of ETS 1 and ETS 2

As part of the EU ETS Review, the EU will establish a new ETS system for buildings and road transportation. The "ETS 2" will launch by 2028 and will place an absolute cap on emissions, decreasing in line with the EU ETS linear reduction factor. Similar to last year, the majority of respondents (65%) anticipate that the ETS 2 will integrate into the EU ETS, a slight increase from last year's 56%. Of those expecting the integration, 50% anticipate it to happen after 2030.

Figure 4: Do you expect that the EU's trade partners will respond to the Carbon Border Adjustment Mechanism (CBAM) by establishing their own Border Carbon Adjustment (BCA) programmes in the next five years?





Eventual linkage between the UK and EU ETS anticipated over the next decade



Despite the UK Government claiming that it remains open to the possibility of linking the UK ETS to other systems, the past year has seen no movement. Over half of respondents (54%) still believe the EU and UK carbon markets will link, up from 51% from last year's survey. Respondents anticipating linkage were split on when it would take place, with 48% expecting linkage before 2030 and 52% expecting it after 2030. May 2023 marked two years of trading under the UK ETS. Prices have continued to rise, with an average auction price of £72.42/tCO2. While the system has quickly become one of the highest-priced ETS globally, the UK government continues to review and evolve the scheme. Specifically, in 2022, the UK launched a public consultation on how to align the UK ETS trajectory with the UK's 2050 net zero target. Survey respondents identified rebasing the cap and reviewing the level of free allocation as the changes which will have the most significant impact in aligning the UK ETS with its 2050 net-zero ambition.



It requires political developments between the UK and Europe to unlock this opportunity."



China

Strong increase in expected prices within the Chinese ETS

Operational since 2021, the Chinese National ETS is the world's largest ETS regulating over 2,000 companies and covering 12% of global CO2 emissions. Despite the size of the market, prices have remained low compared to other Asian ETS systems, with an average secondary market price of ¥55.30/tCO2 (€7.43/tCO2) in 2022. In line with previous survey results, respondents anticipate a strong increase in expected prices within the Chinese ETS. There was an average expected price of €27.65/tCO2 between 2022-2025 and €40.63 between 2026-2030, eventually buoyed by the potential impact of CBAM and the upcoming peak in emissions, both taking place only after 2025. However, these results represent a slight decrease of 15% and 9% percentage points from the average expected prices reported last year respectively.

The Chinese National ETS continues to operate with an intensity-based cap, applying a bottom-up approach, where the cap is based on an entity's actual production levels. The Chinese authorities are working to establish a more robust legal framework and move towards setting an absolute cap – as seen in the Guangdong and Chongqing systems. However, a large number of respondents (38%) are uncertain whether the Chinese ETS will transition from an intensity-based cap to an absolute cap.

The distribution of allowances in the Chinese ETS currently takes place through free allocation. The Draft Interim Regulations, published by the Ministry of Energy and Environment in 2021, are expected to gradually introduce allowance auctions. Respondents continued to show a conservative outlook towards when these measures will be introduced, with 42% anticipating auctioning will take place in 2025 or later. Only 8% of respondents believe auctions would be introduced into the National ETS before 2025.

China's regional pilot schemes are not expected to integrate until after 2024

The Chinese National ETS continues to operate in parallel to the regional systems. Over time, the regional systems are expected to integrate into the national ETS. The majority of respondents (50%) expect the pilot systems to be integrated after 2024, a marked decrease from the sentiment expressed in the previous two years at 81% (2022) and 57% (2021).

Figure 6: Existing Chinese regional ETS pilots are transitioning into the national ETS. When do you expect all pilots will be integrated into the national ETS?



 $0\% \quad 5\% \quad 10\% \quad 15\% \quad 20\% \quad 25\% \quad 30\% \quad 35\% \quad 40\%$

No extension of Chinese ETS to new industries expected until after 2024

In line with results from previous surveys, respondents showed limited consensus on which industries are likely to be included next in the Chinese National ETS. Petrochemicals were identified as the most likely sector to be covered next, with 12% of respondents expecting coverage by 2024 – a significant decrease from 36% in last year's survey. Chemicals (38%) and steel (35%) were deemed the next most likely to be included between 2025-2028, down from 20% and 17% respectively. Overall, respondents' sentiment reflects the lack of concrete progress in establishing new proposals for new sectors in the Chinese National ETS. Non-ferrous metals (8%) and building materials (8%) were seen as the least likely to be covered at any point.

Figure 7: The Chinese ETS launched in 2021, becoming the world's largest ETS, covering over 4bn tCO2 in the power sector. When do you expect the following additional industries to be covered by the Chinese ETS?



Rest of Asia-Pacific

Malaysia is expected to be the country within Asia-Pacific most likely to introduce an ETS over the medium term, and Japan explores a compliance ETS.



Figure 8: When do you expect the following countries and regions to implement a carbon price (covering at least the power sector), if at all?

By 2024 Between 2025-2026

Between 2027-2030

I don't expect coverage Unsure

After the launch of an intensity-based ETS in Indonesia in 2023, most respondents do not anticipate a new carbon pricing scheme will emerge in Asia-Pacific by 2024. Malaysia is considered the most likely to implement a carbon price (covering at least the power sector), with 44% of respondents expecting it to happen by 2026, increasing from 27% in last year's survey. A significant share of respondents also expect a carbon pricing mechanism to be introduced in India (36%), Thailand (28%), and Taiwan (28%) by 2026.

In previous years, respondents considered Japan the most likely country in the Asia-Pacific region to introduce a carbon pricing mechanism.

In April 2023, however, Japan's Ministry of Economy, Trade and Industry (METI) launched a voluntary carbon market for Japanese companies - the Green Transformation (GX) League. This launch occurred as the Japanese Government passed the GX Basic Plan, which outlines a road map for carbon pricing, including proposals for a mandatory ETS starting in 2026. According to the majority of respondents (69%), the GX League is expected to evolve into a mandatory compliance mechanism by 2026. However, some respondents believe this transition may occur later than 2026, and the compliance system may initially only apply to the power sector.



Improving market liquidity in Korea's National ETS

In 2022, the Korean government proposed further measures to increase liquidity and stabilise prices in the Korean ETS. These proposals included increasing the current credit holding limit, permitting consignment trades, as well as increasing the number of financial institutions and emission trading brokers within the list of entities eligible to participate in the K-ETS. In previous years, respondents identified the inclusion of third parties, particularly financial institutions, as a key lever to enhance liquidity in the market. However, only 39% of respondents believe the new measures will improve liquidity and stabilise prices in the K-ETS. This year's findings support the sentiment seen last year, where 42% of respondents believed the inclusion of third parties would enhance liquidity.

Figure 9: In November 2022, the Korean Government proposed increasing the current KAU credits holding limit and permitting consignment trades. Do you believe such measures will boost market liquidity and stabilise prices in the Republic of Korea's carbon market?



New Zealand has been running an operational emissions trading scheme (NZ ETS) since 2008, and it is the country's primary climate policy instrument. The New Zealand government is currently exploring the possibility of establishing a voluntary carbon market (VCM) framework to operate in tandem with the NZ ETS to incentivise more organisations to participate in domestic climate mitigation action. When asked about the potential impact of introducing a voluntary carbon market framework, more than half of the respondents (52%) believed that adjustments should be made to the NZ ETS to accommodate a new VCM. Some respondents noted that it would be important to remove NZU forestry credits from the current ETS to avoid the risk that both compliance and voluntary units exist for similar types of projects.



Growing positive sentiment for the development of carbon pricing mechanisms in Latin America

In 2020, Mexico launched its ETS, which will become fully operational in 2023, making it the first ETS in Latin America. Respondents believe the primary conditions for ensuring the long-term success of the scheme are:

- Tightening the cap and gradually allocating allowances through auctions (19%).
- Delivering sound integration with emerging Mexico sub-national systems (19%).
- Integrating the ETS with the voluntary carbon market (16%).

Meanwhile, respondents anticipate that Brazil (57%), Chile (47%), and Colombia (43%) will be the most likely to launch operational ETSs by 2026, which is consistent with last year's sentiment. In the short term (by 2024), respondents believe Colombia (23%) and Chile (23%) are the most likely to launch ETSs. However, uncertainty is high for Peru (37%) and a large share of respondents believe that Argentina will only implement an ETS after 2027 (36%).

There has been a noticeable shift in sentiment towards Brazilian carbon markets. A majority of respondents (57%) now anticipate the launch of an ETS by 2026, a significant increase from last year's 32%. Respondents also identified the sectors they believe are most important to be covered by an operational carbon pricing scheme in Brazil, agriculture (23%), oil and gas (22%), power (17%), and industry (17%) were the top choices. The only significant change from last year's findings is the increased emphasis on agriculture. **Figure 11:** Brazil's GHG emissions profile is different to other emerging economies, with a significant proportion of emissions from the Agriculture, Forestry and Other Land Use (AFOLU) sector. If Brazil was to implement a carbon pricing scheme, which sectors should it include?



Limited collaboration on carbon markets within Latin America is down to the lack of political interest and alignment in the region

Latin America has multiple national and sub-national carbon pricing instruments. However, to date, there has been limited collaboration between countries in the region to align and link such instruments and promote carbon markets across the continent. Respondents identified three key reasons for this:

- Lack of political interest and alignment (35%).
- Limited capacity-building initiatives and awareness about carbon markets (26%).
- Limited technical understanding about the benefits of regional collaboration (25%).

Only 4% of respondents believe the lack of collaboration is due to a lack of interest by the business community, indicating the private sector is supportive of greater regional collaboration on carbon markets. Respondents also highlighted the importance of promoting honest and transparent discussions in the region.



Figure 10: When do you expect the following countries to launch an operational ETS?

Political changes across Latin America might have varying implications on carbon pricing developments in the region

Following the appointment of President Luiz Inácio Lula da Silva in January 2023, there is a growing expectation for climate action in Brazil. A significant number of respondents expect recent politicalchanges in Brazil (81%), Colombia (47%), and Chile (47%) to have a positive impact on domestic carbon pricing initiatives. In Brazil and Colombia, this is a significant increase compared to last year's results of 57% and 27% respectively. However, there remains a high level of uncertainty about the effects of political change on carbon pricing, especially in Costa Rica (44%) and Peru (41%), where many respondents are unsure of the implications.

In Brazil, carbon pricing instruments have been considered viable options to help the government achieve its climate commitments. The majority of respondents believe the carbon pricing policy most likely to occur in Brazil over the next year is the approval in Congress of legislation on a domestic carbon market (31%). A sizable percentage of respondents, 19%, were uncertain about the most likely carbon pricing policy, and 16% of respondents believe that a carbon tax included as part of the national tax reform plan is the most likely option.

Figure 12: Despite compliance and voluntary carbon market activity across the region, there has been limited regional collaboration between Latin American countries on these topics. What is the key reason for this lack of concrete action on market alignment and linkage?



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There is reliance on developed countries or multilateral organisations' support rather than honest peer to peer discussions."



The Inflation Reduction Act is unlikely to accelerate the adoption of carbon pricing in the US, nor significantly impact VCM efforts

The Inflation Reduction Act (IRA), signed into law in August 2022, included a \$370 billion investment to accelerate the clean energy transition and enhance energy resilience in the US economy⁵. Although not an explicit ETS or carbon tax, the IRA contains provisions that should act as a market-based instrument to stimulate capital flows into cleaner technologies. For example, the enhancements to promote carbon capture and sequestration (CCS) raise the credit values to \$85/ tCO2 and \$180/tCO2 for both point source and direct air capture respectively and broadens the definition of qualified facilities by reducing capture thresholds.

However, the majority of respondents (62%) do not expect these measures to be a driving force for further carbon pricing policies in the United States. Given the current composition of Congress, it appears that Federal action on reducing emissions will be anchored to the IRA whilst additional ETSs continue to operate and expand at state level.

The IRA is projected to reduce US GHG emissions by 24% to 35% by 2030 compared to 2005. These reductions will primarily be achieved through incentivizing voluntary actions such as investing in renewable energy and providing incentives for electric vehicle purchases. However, most respondents (38%) believe the tax incentives will have little to no impact on the VCM, as they are focused on activities outside of the VCM's scope.





US states cap-and-trade programmes

The California Air Resources Board (CARB) is assessing the state's cap-and-trade programme to evaluate the need to tighten the stringency between now and 2030, given the need to accelerate towards their 2030 emissions reductions target. CARB will report any programme changes to the state legislature by the end of 2023. A large majority of respondents (68%) expect that the California cap-and-trade programme will be extended beyond 2030. Of those, 100% anticipate it to occur by 2028, with some believing it could be as soon as 2025. The majority of respondents expect both the regulator (CARB) and the legislature to extend the programme.

The 12-state Regional Greenhouse Gas Initiative (RGGI) has recently launched a Programme Review process, including the release of a set of three broad modelling scenarios:

- Scenario 1: Business as usual until 2030, then a flat cap going forward.
- Scenario 2: Extend the current reduction trajectory of the cap through to 2040.
- Scenario 3: Increase the cap reduction trajectory to hit zero by 2040.

The majority of participants (62%) were unsure which scenario is most likely to be adopted by the end of the Review Process, which is scheduled for late 2023. Of the remaining participants, 27% believed that Scenario 2 would be the most likely to be adopted in the time frame.

New York State, under the leadership of Governor Kathy Hochul, is in the process of rule-making for an economywide cap-and-invest programme in 2023, which aims to achieve net-zero emissions and establish a declining cap on GHG emissions. Additionally, Governor Hochul plans to propose legislation for a universal Climate Action Rebate, which would direct over \$1 billion in cap-and-invest proceeds to New York citizens annually. Respondents expressed a more certain sentiment about the success of these programmes, with 43% believing the cap-and-invest programme will be operational by 2025, compared to 48% of respondents who were uncertain about New York City's establishment of its own ETS.



Canada evolves carbon offset regime and considers border carbon adjustments

Canada's Greenhouse Gas Offset Credit System, established in June 2022, aims to encourage costeffective domestic emissions reductions and removals from activities that are not covered by carbon pollution pricing. The system was designed and created in alignment with the Pan-Canadian Greenhouse Gas Offsets Framework, which incorporates experience and expertise from Alberta, British Columbia, and Québec, which already have their own offset credit systems.

In terms of sentiment on how this system may evolve, 23% of respondents identified that further linkage agreements between federal and provincial offset systems would be one of the key drivers for the success of the federal offset system. Finalising more federal protocols and generating supply (16%), and unlocking new sources of demand from outstanding programmes and policies (16%) were perceived as other ways to support the federal offset system.

In 2021, the Canadian government signalled its intent to develop a Border Carbon Adjustment (BCA) mechanism. However, 41% of respondents are unsure whether Canada will implement a BCA. Sentiment has softened since our last survey; this year, 38% of respondents expect such a system to be introduced by 2030, down from 48% in 2022.

Figure 14: Do you think that Canada will follow suit and implement a Border Carbon Adjustment (BCA)?



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There is a need to put pressure on linkages, and increased demand from regulated emitters in non -backstop jurisdictions"



Although there are currently no emissions trading systems in operation across the Middle East and Africa, some countries have been considering implementing carbon pricing instruments (e.g. Botswana, Côte d'Ivoire, Israel, Morocco and Senegal), and others have indicated plans to set up an ETS (e.g. Nigeria).

Respondents were still not optimistic about the likelihood of a carbon pricing mechanism (covering at least the power sector) being implemented in Africa in the short-to-medium term (by 2026). Respondents were more optimistic about the Middle East, with the UAE (50%) considered the most likely to develop a scheme by 2030, followed by Israel (46%), Saudi Arabia (43%) and Egypt (43%). A number of events are likely to be connected to this positive sentiment, namely the continuing promotion of the voluntary carbon market in the UAE as it prepares to host the COP28, the establishment of carbon pricing principles in Israel in 2021, and the first carbon offset auction taking place in Saudi Arabia in 2022.

The African Carbon Markets Initiative (ACMI) is considered a key initiative to scale carbon markets in Africa

The African Carbon Markets Initiative (ACMI), an initiative to produce 300 million carbon credits annually by 2030, was launched at COP27. With seven countries already signed up, the ACMI is seeking to establish an advance market commitment to purchase up to \$1 billion of high-integrity African credits. The overwhelming majority of respondents (79%) believe the ACMI, in partnership with other initiatives, will be critical in scaling Africa's participation in voluntary carbon markets.

Figure 15: When do you expect the following countries and regions to implement a carbon pricing mechanism (covering at least the power sector), if at all?



By 2024 =Between 2025-2026 =Between 2027-2030 =Beyond 2030 =I don't expect coverage =Unsure



6. Price trajectories



Figure 16: What do you expect the average carbon price to be for each of the following ETS in the periods 2022-2025 and 2026-2030?

Note: To calculate the expected average carbon price, where respondents selected the "Over €120" category this was assumed to be €135.

Each year, carbon price projections are part of the survey, in order to compare the market sentiment for prices year-on-year. Respondents selected price ranges that were converted into weighted averages.

The results from this year's survey indicate that while prices are still expected to increase across all ETSs, the extent of the increase is less than what was anticipated in last year's survey. Participants have become more cautious across almost all markets, and the expected prices for the 2023-2025 and 2026-2030 periods have decreased for every emissions trading system included in the survey, except for the EU ETS price in the period 2026-2030, which has remained at €100t/CO2 (£86). Nonetheless, the overall bullish sentiment expressed in the 2022 and 2021 surveys persists, as the long-term trend of rising prices across the systems remains.



In several instances, prices have already surpassed or are in line with the projection made for the period 2026-2030 in last year's survey. For example, the EU ETS peaked at €100.34/tCO2 in February 2023, and the UK ETS hit £97.75/tCO2 (€115) in August 2022.

Consistent with last year, the EU and UK ETS have the highest expected average carbon prices of any ETS across both periods of 2023-25 and 2026-30, with prices expected to reach €100/tCO2 and €93/tCO2, respectively during the period 2026-30 for the systems.

Australian Carbon Credit Units (ACCUs) were included in the survey for the first time this year. Respondents expect the ACCU average carbon price (between 2023-2035) to be €43.08, double the spot price of (€21) in December 2022⁹. For the period between 2026-2030, respondents expect the average price to be €55.83. This comes as ACCU prices are expected to soar from 2025, impacted by the growing demand for carbon offsets from Australian corporates and the late-March 2023 reforms made by the Australian Government.¹⁰¹¹

Although initial trades on the South Korean ETS have been modest, averaging €16.30/tCO2 in 2022, the average carbon price is expected to increase to €38.79/tCO2 in the period between 2022-25 and to €52.69/tCO2 between 2026-30, a slight reduction from last year's expectations, but still nearly double the expected prices from 2021. Meanwhile, in New Zealand, the government announced in December 2022 new regulatory settings for the NZ ETS for the period 2023-27 that raise the auction floor price and CCR trigger price in line with inflation. The new auction reserve price for 2023 is €19, up from €18.60 previously. Notably, the average carbon price for the NZ ETS was €43.58 in 2022, which is nearly in line with respondents' expectations for the period 2023-25 at €45.00.

Participants believe the average global carbon price needed by 2030 to put the world on track to meet the 1.5°C goal is €145, compared with €118 to meet the 2°C goal. For both the 1.5°C and 2°C goals, there has been an increase in price compared to last year, and the 2030 global carbon price required for the 2°C goal has nearly doubled since 2021 (€63). The average global carbon price required by 2050 to meet the 1.5°C goal is €192, a slight dip from last year's €200, whereas the anticipated price for the 2°C goal has increased to €174 from €152.

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We use the EU ETS price, and expectations around its price development, in internal decision making processes also outside of EU/EEA."

Figure 17: Carbon price (€/tCO2) needed to meet the long-term goals of the Paris Agreement across successive surveys.

By 2030, what global carbon price do you believe is needed to meet the $2^{\circ}C$ goal?

Year	Median	Mean	Min	Max
2023	€100.00	€118.08	€20.00	€300.00
2022	€100.00	€97.38	€5.00	€200.00
2021	€50.00	€63.20	€10.00	€180.00
2020	€50.00	€55.97	€12.00	€180.00
2019	€50.00	€56.37	€20.00	€150.00

By 2050, what global carbon price do you believe is needed to meet the 2°C goal?

Year	Median	Mean	Min	Max	
2023	€145.00	€173.66	€0.00	€500.00	
2022	€145.00	€151.76	€11.00	€550.00	
2021	€100.00	€108.72	€10.00	€459.00	
2020	€80.00	€96.84	€30.00	€250.00	

By 2030, what global carbon price do you believe is needed to meet the 1.5°C goal?

Year	Median	Mean	an Min	
2023	€135.00	€145.39	€28.00	€600.00
2022	€120.00	€124.35	€5.00	€500.00

By 2050, what global carbon price do you believe is needed to meet the 1.5°C goal?

Year	Median	Mean	lean Min	
2023	€150.00	€191.62	€0.00	€800.00
2022	€150.00	€200.50	€9.00	€950.00

Internal carbon pricing use holds steady

Meanwhile, 68% of respondents use an internal or shadow carbon price in their investment decisions, which is consistent with last year's results of 71%. The majority of companies use a carbon price below €20 (18%) and between €75-99 (18%), followed by the €20-49 range (12%). Multiple respondents noted that their internal carbon prices are based on market prices.

The number of respondents that do not currently use an internal or shadow carbon price has dropped from 29% last year to 9% this year. These respondents are expecting to implement an internal or shadow carbon price in the next 18 months. Of those that use an internal carbon fee, 41% invest the proceeds in further emissions reductions across their businesses, down from nearly two-thirds of respondents last year.

Corporate net zero targets continue to drive the demand for voluntary carbon credits

The VCM has experienced accelerated growth in recent years, with the size of the market expected to reach \$10 billion – 40 billion by 2030.¹² According to respondents, the increase in demand for carbon credits has been primarily driven by an increase in corporate net zero pledges, demand due to compliance obligations from markets such as CORSIA which accept voluntary credits, difficulty in reducing GHG emissions from corporate value chains, and agreement to use offsets towards interim net zero targets.

The expected growth of the VCM over the next decade has brought about questions over whether the market will be able to accommodate the increase in demand. However, respondents remained optimistic, with 71% believing the VCM will be able to accommodate the growth in companies' net zero commitments and pledges to reduce emissions by 2030, a modest increase from 66% last year. Some respondents did raise concerns about the quality of credits and highlighted the need for clear rules on which credits are eligible for corporate entities to use. It will be interesting to see in next year's survey whether such concerns reduce following the efforts of the Integrity Council for the Voluntary Carbon Market (IC-VCM), an independent governance body for the VCM, and the Voluntary Carbon Markets Integrity Initiative (VCMI), a multi-stakeholder platform to drive credible claims in the VCM.¹³¹⁴

Figure 18: What do you think are the primary drivers for the increase in demand for carbon credits?



There is a growing recognition of the importance of carbon removal technologies in the transition to net zero, with 72% of respondents expecting a market partition between carbon reduction/avoidance credits and carbon removal credits by 2030, an increase from 70% last year, and 66% in 2021. The majority of respondents plan to use nature-based removal credits as part of their market growth strategy. The most selected project types were nature-based projects with, Afforestation, Reforestation and Revegetation (ARR) projects (18%), soil carbon sequestration (17%), biochar (15%), and blue carbon and ocean alkalinity enhancement/fertilisation (12%) being the most popular amongst respondents.

Challenges identified to scale up the voluntary carbon market

Figure 19: What are the two most important challenges facing



The use of carbon credits by corporate entities has come under increased scrutiny in the past twelve months. In this year's survey, respondents reflected this sentiment by identifying public perception and negative press coverage as the two most significant challenges facing the VCM in the year. Respondents also identified the quality of carbon credits and uncertainty around corporate claims as major challenges facing the market.

Since the establishment of the Taskforce on Scaling Voluntary Carbon Markets (TSVCM) in 2020, two bodies have emerged to bring standardisation and credibility to the VCM, the IC-VCM and VCMI. VCMI is to release its operable Claims Code of Practice in June to outline how companies can make transparent and credible claims in relation to their net zero commitments. Based on a provisional Code of Practice released last year, nearly half (44%) of respondents remained uncertain if it has the potential to improve the integrity of carbon credits within the VCM.

Respondents showed cautious optimism when asked about the IC-VCM. The body recently released its first set of documents: the Core Carbon Principles (CCPs) and the programme-level Assessment Framework (AF), which begin to set the new threshold for high-quality offsets. The majority of respondents selected "maybe" (37%) or "yes" (34%) in response to whether they believe the CCPs will improve the integrity of credits within the VCM and support the longevity of the market. Critically, some respondents noted the need for complementary measures and tools to support the CCPs to drive integrity across the market.

Since 2021, there have been growing concerns about the conversion of credits into crypto tokens, and in 2022 Verra announced that it would ban the conversion of retired credits into crypto tokens.¹⁵ As a result, 40% of respondents are uncertain about the future market for digital carbon tokens. However, a quarter of respondents anticipate digital tokens becoming mainstream in the VCM, with a number of respondents commenting on the positive impact blockchain technologies could have on measurement, reporting and verification and ensuring the integrity of the market.

Aligning the VCM with Article 6 is expected to present challenges

Following COP27, questions remain over how Article 6 of the Paris Agreement will be formalised. In particular, the concept of Corresponding Adjustments (CAs), how they interface with the prevailing standards within the VCM (Verra, Gold Standard etc.) and the mechanisms for labelling carbon credits with CAs in the various carbon registries all remain unclear. There is an ongoing debate about whether only credits with CAs should be eligible for credible offsetting claims. However, the majority of respondents (52%) disagreed that only credits witha CA should be eligible for credible carbon offset claims, a modest increase from 47% in last year's survey.

The biggest challenges around future alignment of the VCM and Article 6 were identified as integrity and credibility concerns of carbon credits (21%), uncertainty within the Paris mechanisms and the VCM (e.g. mitigation contribution ERs) (20%), and lack of government support and political risk (20%).

Figure 20: Aligning the VCM with Article 6 requirements raises a number of issues. In your view, which of the following items constitute important challenges.



8. International: UNFCCC negotiations

Article 6 negotiations are currently still ongoing, with little progress seen at COP27. Respondents were split on the role that Article 6 will play in lowering abatement costs, increasing ambition and driving climate action to achieve the temperature goals of the Paris Agreement, with 45% claiming that it will play a significant role (compared to 39% saying it will play a limited role). Respondents also expected that Article 6 will play a more significant role if the remaining details are resolved in a timely manner.

The agreement reached on Article 6.4 allows the transition of some CDM projects into the new crediting mechanism, although transitioning CDM activities must use 6.4 mechanism methodologies either after 2025 or after their current crediting period has ended, whichever comes first. While 44% of respondents believe that Article 6 market participants should avoid the purchase of credits from projects using old CDM methodologies, 23% do not think such credits should be avoided, and 33% were unsure.

Several countries have started signing bilateral agreements for the purchase of Internationally Transferred Mitigation Outcomes (ITMOs) under Article 6.2, but there are challenges to increasing the adoption and ambition of these deals. Insufficient understanding around linkages between the mechanisms and NDCs (20%) and lack of guidance on authorisation and corresponding adjustment (20%) were determined as the largest challenges.

Figure 21: Several countries have started signing bilateral agreements for the purchase of Internationally Transferred Mitigation Outcomes (ITMO) under Article 6.2. In your opinion, what is the main challenge in increasing the number and ambition of these types of deals over the next five years?



25%

The Article 6.4 crediting mechanism is expected to be fully operational between 2026 and 2028

61% of respondents believe the Article 6.4 crediting mechanism will only be fully operational between 2026 and 2028. This is a marked improvement from last year, where only 31% of respondents believed it would be operational between 2026 and 2028. Once operational, any party can become a purchaser of credits under Article 6.4. Respondents anticipate that corporations (33%) will be the primary purchaser of credits under Article 6.4, and individual countries (31%) will also be large purchasers of credits too. Participants also highlighted that airlines under CORSIA might drive the initial demand.



Most respondents (75%) believe that in 2030, a carbon credit with Article 6 authorisation for use and corresponding adjustment will command a price premium. However, there is a wide range of views on the size of the premium. About a quarter of respondents were unsure, given uncertainties at this time.

Looking forward to COP28, the sentiment is broadly pessimistic, with only 13% of respondents confident that the crucial decisions regarding the operationalisation of Article 6 will be made.

Figure 22: When do you expect the Article 6.4 crediting mechanism

Appendix 1

System	2023 result:	2022 result:	2021 result:	2023 result:	2022 result:	2021 result:
	Expected Average Carbon Price in €, 2023-25	Expected Average Carbon Price in €, 2022-25	Expected Average Carbon Price in €, 2021-25	Expected Average Carbon Price in €, 2026-30	Expected Average Carbon Price in €, 2026-30	Expected Average Carbon Price in €, 2026-30
EU ETS	84.40	85.45	34.13	100.00	99.63	47.41
WCI (California- Quebec)	39.23	43.73	22.68	51.54	55.00	33.85
RGGI	32.20	39.36	15.24	45.83	51.11	24.65
South Korean ETS	38.79	46.67	20.26	52.69	58.33	29.18
China National ETS	27.65	32.37	12.29	40.63	44.82	20.04
New Zealand ETS	45.00	51.43	25.10	57.31	64.82	34.45
UK ETS	79.22	85.65	31.19	92.73	98.71	44.39
Global Emission Offsets (GEO)	20.00	33.36	N/A	29.00	45.98	N/A
ACCUs	43.08	N/A	N/A	55.83	N/A	N/A

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The survey was conducted by PwC UK using an online survey tool. The questionnaire was developed jointly by PwC and IETA. An email was sent out to all IETA members to invite them to participate. The survey consisted of 61 questions, but participants were given some freedom to choose sections and subject matter that they felt most confident answering. The questions were predominantly multiple choice with the option of providing comments and alternative answers. The survey opened on 05 April 2023 and closed on 28 April 2023. Reminders were sent out by email between these dates to increase the response rate. As in last year's edition, unattributed quotes given by survey respondents were presented alongside the survey results, thereby giving all IETA members the opportunity to contribute in greater detail.

It is important to make a few observations regarding the interpretation of data and the comparability of results between IETA GHG Market Sentiment Surveys conducted in different years. Firstly, the sample size may differ between results. Secondly, since the first edition of the survey in 2005, different groups have been asked to participate. In the first four editions, only IETA members were asked to reply, by sending in one response per organisation. The mailing list was enlarged for the fifth and sixth editions of the survey, to include a wider range of GHG market participants and observers. The seventh survey, in 2012, was based on semi-structured interviews with key IETA members. In 2013, the original approach of surveying IETA members only was readopted. Since 2014, the survey has allowed multiple responses per IETA member company to gain a broader survey of sentiment among market participants.

It should also be noted that several questions in the survey gave participants the option of selecting multiple answers. Hence, not all percentages displayed throughout the report add up to 100%. Moreover, where participants were asked to rank choices, weightings were applied accordingly. Finally, due to rounding, the percentages displayed in graphs may sometimes show slight discrepancies with the text descriptions or appear to not add up 100%.

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