

Refinitiv Carbon Market Survey 2019

Tightening supply, rising prices – a new dawn for European Carbon

- The survey findings show pragmatic support for cap-and-trade as an instrument to abate greenhouse gas emissions. Some 62% of the respondents see it as the best of the politically feasible options.
- One in four see emission trading as an ideal policy tool, a higher share than in 2018. We attribute the more positive assessment to the sharply rising carbon price in Europe over the last year, showing stakeholders and observers that the cost of emissions is no longer negligible.
- European respondents see speculative trading as the most important price driver, ahead of low auction volume in 2019 (reduced because of the Market Stability Reserve) and Brexit uncertainties.
- Among the key groups of abatement policies in Europe, the EU Emission Trading System (EU ETS) is seen as the second most important, after national climate/energy policies but ahead of other EU level policy instruments.
- A majority of respondents expect the EU ETS parameters to be tightened further during the fourth trading period (2021-2030). Two thirds believe the annual emission cap will shrink at a faster rate than the 2.2% annual reduction that is currently planned for the next decade.
- Two-thirds of respondents also expect the discussion on 2050 climate targets to lead to the adoption of more ambitious targets for 2030.
- Among the surveyed emitters subject to the EU ETS, 29% say the system causes them to reduce emissions, an equal share says it has led them to plan future cuts. Some 21% say it is unlikely to spur any abatement - a much smaller share than the 33% who said so in 2018.
- As for the effect on competitiveness, 38% see the EU ETS as having an important effect, up from 19% in 2018. Another 33% see it as somewhat important and 29% say it has little or no effect.
- On a more global level, one of the most interesting findings is that 72% of respondents for the aviation emission questions believe the EU will allow flights to and from Europe to be covered by the new international system (CORSIA), rather than by the EU ETS. CORSIA is being set up by the International Civil Aviation Organization (ICAO) and several major aviation countries, which are starting to participate in it from 2021.

16 May 2019

Analysis by **Refinitiv Carbon team**

Refinitiv Energy Commodities Content and Research

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REFINITIV CARBON RESEARCH

PROVIDING CRITICAL INSIGHT INTO ENERGY AND ENVIRONMENTAL MARKETS

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Refinitiv Energy Research (previously Thomson Reuters) provides independent news and analysis for international energy markets. We monitor fundamental data, policy developments, and key market players in order to provide professionals with market-moving information.

Our carbon team (originally Point Carbon) provides an unrivalled knowledge of emission trading dynamics that positions us as the number one supplier of in-depth market intelligence.

CARBON MARKET SURVEY

The Carbon Market Survey 2019 ran from 28 February to 5 April, garnering replies from 165 respondents all over the world. The survey, including this report, is the result of cooperation between Refinitiv staff in Oslo, Beijing, New York and Kiev. Questions were drafted and answers interpreted by a team of analysts including Anders Nordeng, Hongliang Chai, Tianyu Meng, Ingvild Sørhus, Aje Singh, Lisa Zelljadt and Maria Kolos. Charts and layout by Maria Kolos. Lead analyst and responsible editor was Anders Nordeng.

The number of survey respondents (both compliance companies and others) dropped significantly in 2018, and then again in 2019, following the introduction of the European Union’s General Data Protection Regulation (GDPR) in 2018. Up until 2017, we sent survey invitations to a legacy list that contained thousands of email addresses collected throughout the years (clients, personal contacts, conference attendees, etc.). As a result of the GDPR, we changed the survey participation procedure from an opt-out to an opt-in approach. In other words, we only invite people who have actively and explicitly given a written consent to be contacted by us.

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EXECUTIVE SUMMARY

Responses to this year’s survey reflect views about Europe’s carbon market more than any other emission trading system, as sustained higher allowance prices in that programme are causing market players to pay attention to its dynamics more than ever before. Over 90% of respondents covered by the EU ETS who participated in this year’s survey said more than a year of markedly higher prices has made their company more aware of its exposure to carbon costs. They also indicated that those costs matter: the long term carbon price is important for investments to a larger share of respondents than ever in the past five years, with more than half of those answering the importance question stating that it is a decisive factor.

Indeed EU carbon continues to be an important factor to stakeholders in all energy markets: it continues its separation from other energy indices, with its price change over the year nearly double that of other related commodities (see **Fig. 0.1**). Last year the difference was even more dramatic, as the price of EUAs had tripled between May 2017 and May 2018.

Like these other commodities, exposure to carbon costs and their fluctuations continues to be something covered entities hedge against. The survey results reveal that most firms’ time horizon for such hedging is three years ahead or less, and that forward curves and a pre-defined risk management policy are the most common basis for hedging.

further tightening of the targets - majority shares of respondents anticipate a steeper linear reduction factor for the cap and a sustained higher MSR intake rate.

Further pricing expectations for EUAs include the potential for one or more European governments to introduce a carbon price floor by 2020 - respondents indicated they thought this was likely, with the Netherlands and France cited most frequently as candidates. Over 90 percent of those answering the survey’s question regarding recommendations of Germany’s coal phaseout commission (to cancel EUAs of the country’s phased out coal-fired plants to avoid a bearish effect on the market balance) think the German government will undertake this supply-tightening measure at least to some extent - one-third of those responding expect such cancellation to be done to the maximum extent.

Those subject to the EU’s tighter future caps are in turn planning emission reduction measures accordingly, with the share of covered entities who say they plan (but have not yet started) emission reductions higher than ever before at 29%.

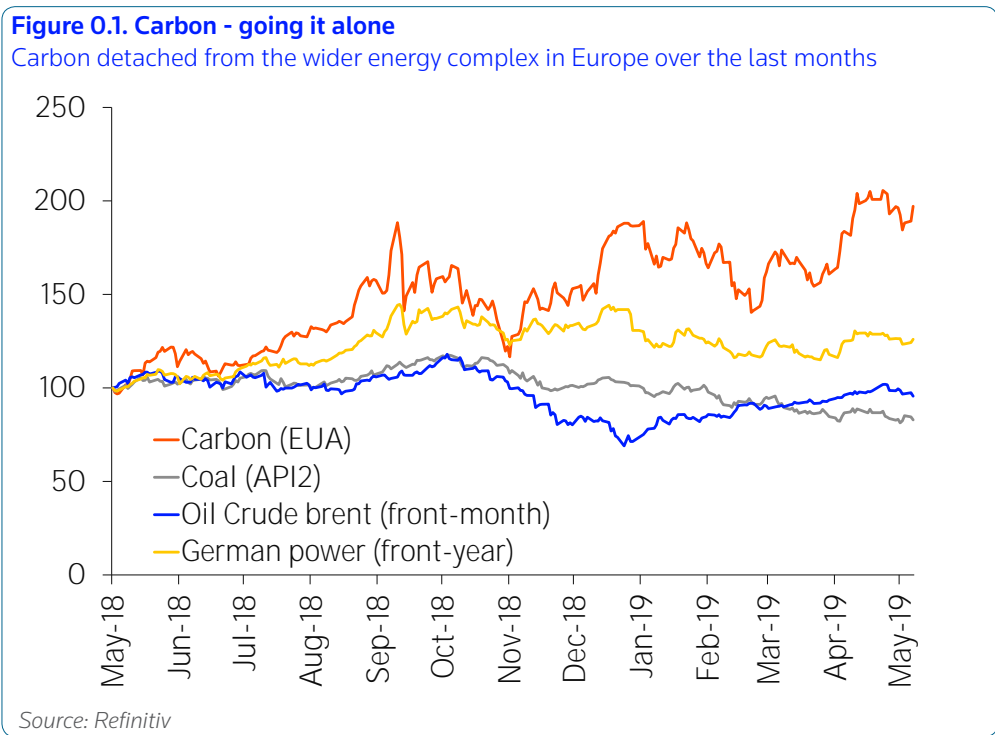
In the longer term, respondents expect the EU to pursue more ambitious climate policy overall: a strategy for a climate-neutral Europe by 2050 is making its way through the EU institutions. The majority of respondents who took a view on this topic (about two-thirds) believe the 2050 climate targets will also lead to a tightening of the existing 2030 targets.

EU PLAYERS PREPARING FOR THE FUTURE

The survey results also indicate that EU entities expect the allowance market to get tighter, and are correspondingly planning for more emission abatement. With the rules for the EU ETS’s next trading period solidifying and the start of that trading period (2021) approaching, market players foresee a

RESPONSES TO THE BIG PICTURE: CAP-AND-TRADE WORKS...AND IS HERE TO STAY

Though respondents do not think the EU ETS drives emissions abatement in Europe as much as policies decided on the level of member states, the survey reflects a strongly increased



confidence in cap-and-trade as a measure to combat climate change overall: the share of respondents finding carbon markets to be the best way to combat climate change (in theory and in practice) grew to nearly one-fourth this year - the highest in our five-year history of asking this question. However, the share of respondents saying cap-and-trade does more harm than good increased strongly as well, possibly indicating that firms are feeling the "bite" of higher prices in most carbon markets over the past few years.

An emissions trading system is also the climate policy most frequently included among a list of measures respondents see as likely to be in use in their home jurisdiction in 2021.

EXPECTATIONS FOR OTHER MARKETS

Questions about the North American and Chinese carbon markets - as well as those about potential demand for offsets from international aviation and policy developments in Australia - garnered far fewer responses than those about the EU, but some survey results on those topics offer relevant insights.

The Carbon Offsetting and Reduction Scheme (CORSIA) for **international aviation emissions** is becoming a more prominent factor in global carbon trading, as the programme's first (voluntary) phase starts in January 2021. Despite the EU covering emissions from intra-EEA flights in its ETS and vowing to expand that coverage to include emissions from flights between Europe and other countries if it deems CORSIA insufficiently ambitious, most respondents to the survey's CORSIA-related questions (72%) believe Europe will allow extra-EEA flights to be covered by CORSIA. This represents a change from last year, when nearly half the respondents thought CORSIA's targets and rules would not satisfy the EU. However, respondents are still sceptical about the degree of participation in CORSIA on the part of large emitters: they do not see countries with large and fast-growing aviation sectors such as China, India, and Brazil joining the programme before 2027.

As for questions about **North American markets**, those that received enough responses to be indicative mainly had to do with various kinds of participation. Auction participation in the WCI is expected to be high, with nearly all respondents to this issue wagering that auctions for the rest of 2019 will sell out or be oversubscribed. Whether overall participation in RGGI is expected to increase is inconclusive, with half the respondents to this question saying the programme would see additional states join in the coming two years while the other half said RGGI membership would remain as is.

Respondents to questions about emission trading in **China** held a clear view on the timeline of the national ETS, with a strong majority believing that trading of carbon units in that programme will begin this year or next. Expected prices of allowances in this national system ranged from 5 to 25 RMB, averaging 14.25 RMB (€1.9). Of the existing pilot ETS already in operation in China, respondents consider those in Beijing, Shenzhen, and Shanghai to be the most successful in terms of market structure and operation.

Of the few existing and potential carbon pricing policies in Australia (none of which involve a carbon market), respondents to survey questions from down under see enhanced use of renewable power as the measure most likely to lead to emission reduction. A win in this month's Australian national election by the party running in opposition to the current governing coalition is also deemed to lead to tighter climate policies.

As for the once-thriving market for international offsets under the UN, respondents answering survey questions about the CDM cited the international aviation sector as the most likely source for demand in the near future: given multiple choices as to who might be buying offset units generated by CDM projects (CERs) between now and 2021, respondents cited international aviation (CORSIA) most frequently, followed by domestic initiatives such as carbon taxes or ETS that allow international offsets for compliance.

1. ABOUT THE CARBON SURVEY

This report is our fourteenth annual survey of the world’s carbon markets. It reflects market sentiment in all major emission trading regimes and includes views on trends, policy developments, prices and the future role of international market-based climate policy.

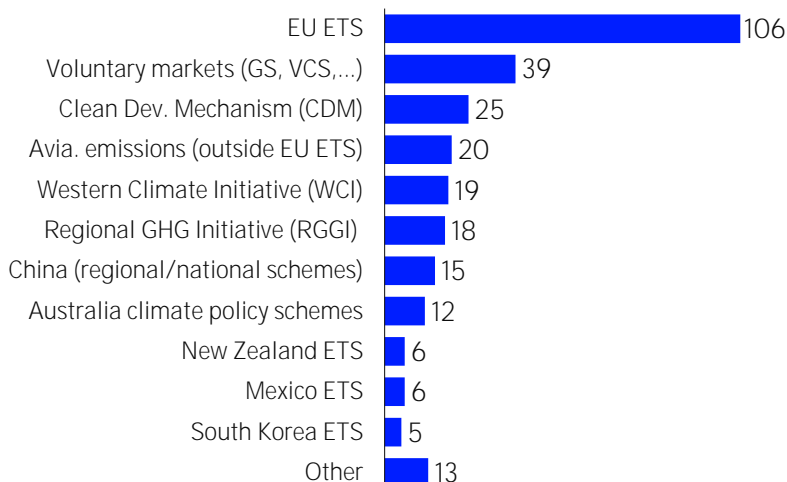
The survey ran from 28 February to 5 April 2019. Using Qualtrics, a web-based survey tool, respondents had the opportunity to answer 91 different questions - some general, some limited to specific markets, and some pertaining to specific respondent profiles and/or geographical locations. This naturally led to wide differences in the number of collected responses among the various markets, with those pertaining to the European market receiving by far the most responses.

Some questions were set up to force respondents to choose one of several listed options, e.g. to select the role that best fits their involvement in a given market. In these cases the universe of respondents (N) equals the number of entries, and the distribution is shown as shares adding up to 100 percent. Other questions allowed for multiple entries, e.g. expectations for future climate policy instrument(s). For these, the number of entries typically surpasses the number of respondents (many tick more than one option), and the distribution cannot be shown as part of a total.

Overall, the survey garnered views from 165 respondents (compared to 370 in 2018 and 768 in 2017). As a consequence of the EU’s new General Data Protection Regulation (GDPR) we have changed fundamentally the way we reach out to potential respondents. Until 2017, we sent e-mails to contacts that had previously replied to the survey (and had not opted out). The vast majority of these contacts were not clients of Thomson Reuters. As of 2018, the marketing operation team of Thomson Reuters / Refinitiv decided that implicit consent (not choosing to opt out) was not sufficient to comply with the GDPR. As a result we have now limited the invitation list to individuals who have actively and explicitly accepted to receive e-mails from the Thomson Reuters group. The survey was also accessible online from a link posted on Eikon and on Twitter.

Figure 1.1. Survey population by market interest

“Which emission market(s) are you involved in or following?” N=165



Source: Refinitiv

Participants were first invited to indicate the market(s) in which they are involved (they could tick more than one).

Unsurprisingly, Europe received by far the most clicks, at 106. Next came voluntary markets (39), the Clean Development Mechanism (25), aviation emissions (20), and then the two North American markets at 18 and 19, respectively - see **Figure 1.1**. Some 15 respondents follow carbon market developments in China, 12 marked interest in Australia, 6 in Mexico. Very few respondents declared involvement in the emission trading systems of South Korea and New Zealand, even though those are well-established and feature active trading on a regular basis. The latter two markets are thus not included in the survey results.

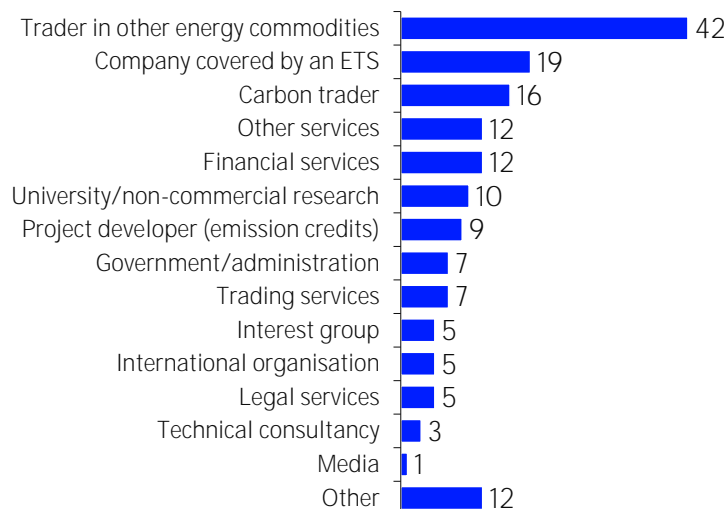
The distribution is relatively similar to previous years, except that voluntary markets have replaced CDM as the second most popular segment.

MANY ROLES AND COUNTRIES REPRESENTED

Respondents were asked to define their role in the carbon market. One-fourth of them ticked the category “energy trader” (carbon not primary focus). Another 19 respondents (12%) ticked “company with ETS regulated emissions,” and 16 ticked “carbon trader.” See **Fig. 1.2**. In short, the universe of respondents shows a preponderance of stakeholders with a

Figure 1.2. Survey population by role

“What is your organisation/department’s role in the emission markets?” N=165



Source: Refinitiv

very tangible and real financial interest in carbon markets. Other significant groups include “financial services,” “other market services,” and “university/research.”

In parallel to the steady and protracted price rally in European carbon (EUAs) since 2017, we have seen new groups of investors such as pension funds and investments banks (re)entering the market. In order to try to assess how many of the traders active today are new to the market, we added a question on this in the 2019 edition of the survey. Some 53 traders (carbon and/or energy) answered this question (**Fig. 1.3**). The vast majority (43) said their firms had already entered the carbon market before 2017.

Looking at geographic location of respondents, the UK is back on top of the list with 24 respondents (**Fig. 1.4**). Next are Germany and Switzerland (both at 14), followed by the Nordic countries (13) and “Mitteleuropa,” (Middle-Europe) in which we include various countries in Central-Eastern Europe (except Germany and Switzerland). Outside of Europe we had 16 respondents from the U.S., 6 from Australia, and 4 each from India and China. The 14 responses grouped as “other Asia-Pacific” include Hong Kong, Singapore, Malaysia, Nepal, Qatar, the Philippines, and Pakistan.

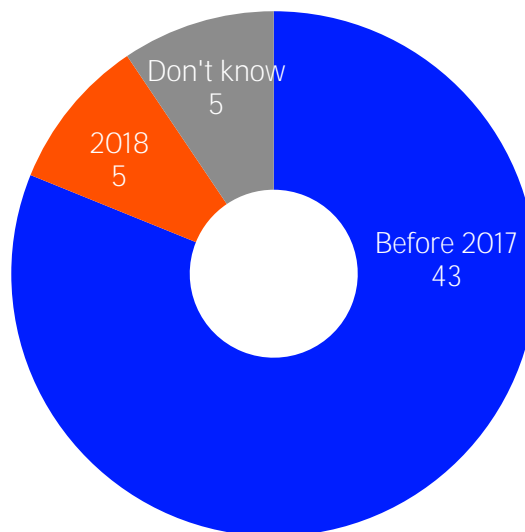
STRUCTURE OF THIS REPORT

The first part of the survey contained general questions asked to all respondents: how they perceive the effectiveness of cap-and-trade for reducing emissions, and which instruments they believe will be in place in the years to come. This is summarised in Chapter 2.

We then proceed by market and region roughly in order of response rate: Europe, aviation, North America, China, Australia, and what is left of the Clean Development Mechanism (CDM).

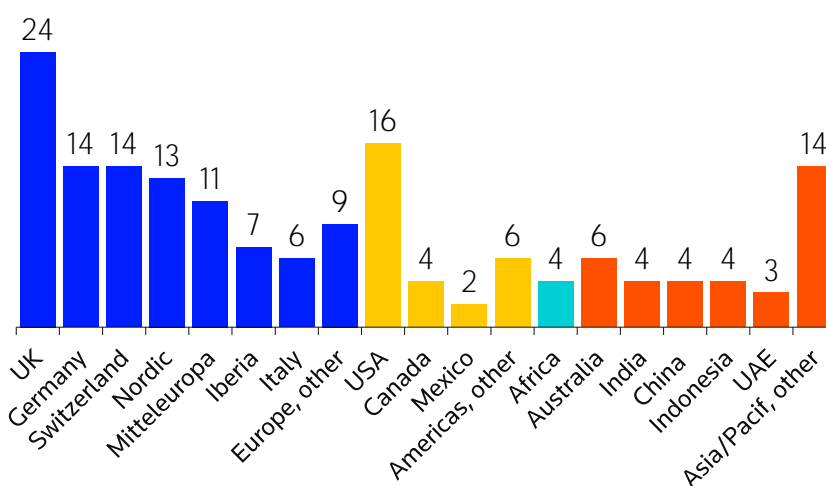
This report does *not* present all 91 questions posed in the survey. To offer an accessible format, we have selected the findings we deem the most interesting and relevant. Please note that due the much lower number of respondents we no longer have statistically significant data for South Korea and New Zealand, two markets that were covered in previous survey reports.

Figure 1.3. New kids on the block?
 “When did your organisation start trading emission allowances/credits?” N=53



Source: Refinitiv

Figure 1.4. Survey population by location
 “In which country/continent are you located?” N=165



Source: Refinitiv

Given the response rate breakdown, the selection of results is clearly weighted toward the EU ETS, which (being the biggest market) is likely to be of interest to many carbon market stakeholders.

2. GENERAL PERCEPTIONS OF CAP-AND-TRADE

The survey posed general questions related to respondents' overall perception of carbon markets ("cap-and-trade" systems) as policy tools to mitigate climate change. Having asked these questions since 2014, we are able to track perception changes year-on-year. All participants, irrespective of location and role, were invited to reply to the questions in this section.

CAP-AND-TRADE – NOT PERFECT BUT STILL THE BEST

Results indicate that respondents' confidence in cap-and-trade as an efficient way to reduce greenhouse gas emissions is growing (Fig. 2.1). Some 24% believe that cap-and-trade is the best way to combat climate change, both in theory and in practice. This is significantly higher than the 15% share last year.

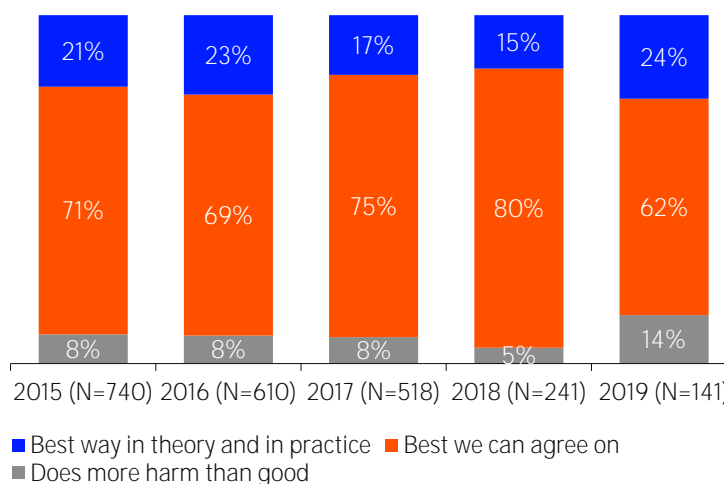
The majority of respondents, however, are not quite as enthusiastic about carbon markets being the optimal climate change mitigation instrument. Out of 141 respondents answering this question, 62% consider carbon markets a suboptimal solution, but the best we can politically agree on. Among the optional comments on this question were assessments by respondents that a carbon tax would be more efficient, but would also be harder to get political support for. Others pointed out that experience has been built and carbon markets are operating, such that abandoning the market approach would mean loss of assets (emission allowances) companies have already built into their budgets.

A full 14% even stated that the cap-and-trade approach does more harm than good. That share of negative perception is much higher than last year.

It is interesting that the relative shares of both fans and opponents of the market approach are up compared to previous years. We attribute this to the recent allowance price rally in Europe: some see that as positive development (the system works, it puts a real price on emissions), whereas others are hurt by the higher costs.

Figure 2.1. Cap-and-trade as an instrument to reduce emissions

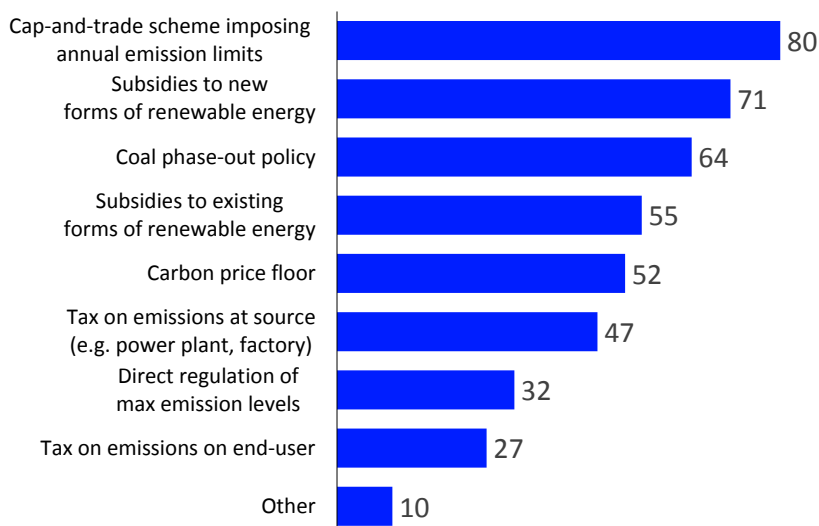
"Please choose the statement that best expresses your view on cap-and-trade as a policy instrument for emission abatement."



Source: Refinitiv

Figure 2.2. Climate policies in use after 2020

Which (if any) climate policy instruments do you think will be in use in 2021 in the jurisdiction(s) in which your company/organisation has activities/is involved? N=155 for a total of 438 entries.



Source: Refinitiv

TRADING AND SUBSIDIES EXPECTED TO CONTINUE

We also ask respondents which climate policy tools they expect will be used in the coming years (Fig. 2.2). Out of 155 respondents, 80 believe emission trading will be used in their jurisdiction, and 71 expect to see subsidies for renewables. In 2018, these measures also topped the list of respondents' expectations, with 203 and 110 out of 280 respondents, respectively. This year we included a new category – coal phase-out policy – which received 64 clicks, the third highest number of entries to this question.

3. EUROPE

Of the 165 respondents to the survey overall, more than 100 are involved in or follow the European Union Emission Trading System (EU ETS). Compared to some 20 for each of the two North American markets and 15 for China, this makes Europe the dominant survey segment. It reflects the fact that the EU ETS is the world's biggest carbon market by traded volume and value, and also that a majority of the survey respondents - primarily from Refinitiv's e-mail list - are located in Europe (see the location of respondents in **Figure 1.4** on page 6).

A) COMPLIANCE ENTITIES

The key stakeholders in a cap-and-trade scheme are the companies obliged to report emissions and surrender allowances. We generally refer to them as 'compliance entities' or 'regulated companies,' whose feedback we consider to be of particular value. Since 2014, this subgroup of respondents has been asked four questions on how it assesses the impact of being part of the EU ETS: whether the ETS has led to emissions reductions, whether it impairs competitiveness, whether it incentivises moving production to countries not subject to an ETS, and whether it affects investment decisions.

Some 25 respondents answered these questions in the 2019 survey, characterising themselves as compliance entities - 13 utilities, 2 airlines, and 4 industrial emitters. Another 6 are from trading desks linked to an emitting company with compliance obligations.

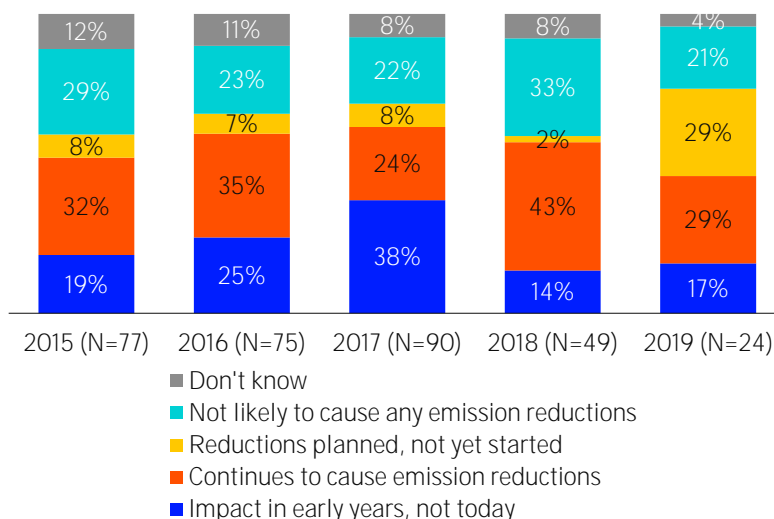
One-third of these emitters reported their annual CO₂ output as below 500,000 tonnes, another third emits between 1 and 5 million tonnes (Mt) per year. Two respondents reported emissions above 10 Mt per year.

DOES THE EU ETS CAUSE CO₂ CUTS?

The most important element for assessing the merits of a cap-and-trade system is whether it actually leads compliance entities to reduce their emissions. There is no doubt that in aggregate, emissions from the companies subject to the EU ETS have

Figure 3.1. Reduction effect. Year-on-year

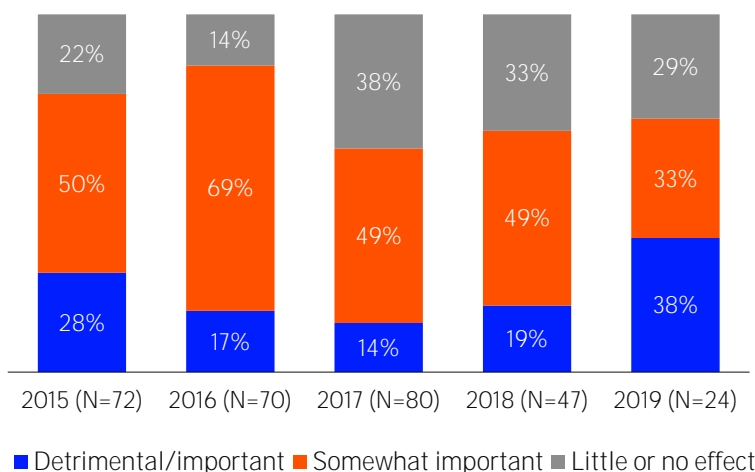
"To what extent has the EU ETS caused your company to reduce emissions?"



Source: Refinitiv

Figure 3.2. Competitiveness effect. Year-on-year

"How do you perceive the impact of the EU ETS on your competitiveness, compared to other factors such as energy prices, general tax level, availability and cost of qualified labour, etc.?"



Source: Refinitiv

been falling steadily since the programme began - particularly within the electricity sector, i.e. power plants. However, correlation does not equal causation: there is no clear way of determining why firms cut their GHG output. Our survey asks whether the EU ETS has triggered/continues to trigger reductions.

Nearly one-third of the 24 compliance entity respondents who answered this question chose the option "continues to cause emission reductions" (**Fig. 3.1**). This represents a shift from 2018, when 43% chose that option. The decrease seems odd against the backdrop of the strong rally in EUA prices over that time period. However, a larger share than last year (29%, compared to 2% in 2018) reported that "reductions are planned, not yet

started." This suggests that high carbon prices are leading firms to consider new (presumably more costly) measures to improve technology/processes, moving beyond the "low hanging fruit" of emission abatement options.

DOES THE EU ETS IMPACT FIRMS' COMPETITIVENESS?

Some 38 percent of compliance respondents see the EU ETS as an important threat to their competitiveness (**Fig. 3.2**). This is a much higher share than in previous years (19% in 2018¹), and probably also reflects the recent carbon price rally being perceived as a challenge. Results from previous years in which the sample size was larger reflected the

worries industry was expressing publicly about increased exposure to global competition - but also industrial firms' benefits as the main recipients of free allocation. This year's findings likely also reflect worries among fossil fuel-based utilities that see increasing competition from new renewable-based power generators.

MOVING PRODUCTION OUT OF EU?

Only a small share of respondents answered in the affirmative when asked whether their company has moved or is considering moving production outside the EU to avoid carbon costs. Like in 2018, the majority of compliance entity respondents are utilities producing electricity in and for the European market. For these companies, moving is not an option. This likely explains why the distribution is similar across the last two years (Fig. 3.3).

IMPACT ON INVESTMENT DECISIONS?

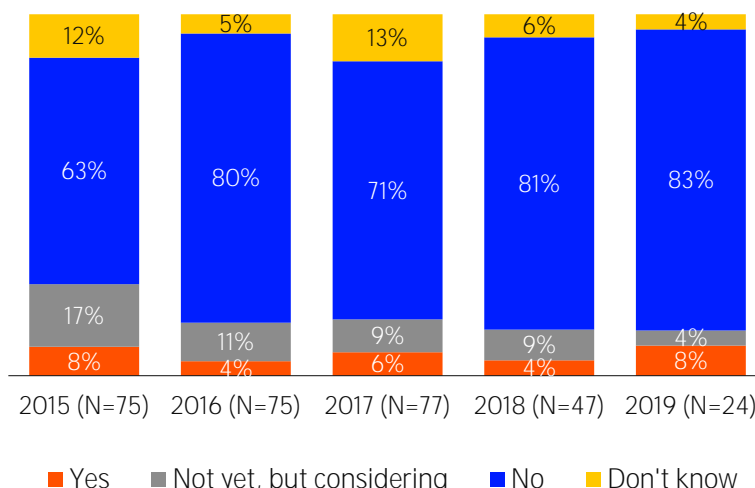
Another recurring topic in our questionnaire is whether exposure to cap and trade affects investment decisions. This year, more than half see it as a decisive factor - markedly up from 31% in 2018, and the highest share since we started asking this question in 2014 (Fig. 3.4). That result suggests that the carbon price rally has started to raise awareness about the cost of emissions at the top management level. See also the specific question on awareness in Fig. 3.9.

MARKET BEHAVIOUR

Beyond impacts on their company, we asked compliance entities a set of questions on surplus holding and hedging behaviour (we define EUA surplus as allocations 2008-2018 minus emissions in the same period). Figure 3.5 shows that 5 of 24 respondents (21%) hold a surplus of permits. An equal number of respondents is not sufficiently informed about the company's situation to answer the question. The share of surplus holders is slightly higher than in 2018, indicating that companies have ramped up hedging as a result of becoming more aware of the carbon price risk. Alternatively, respondents' 2018 emissions may have

Figure 3.3. Location effect. Year-on-year

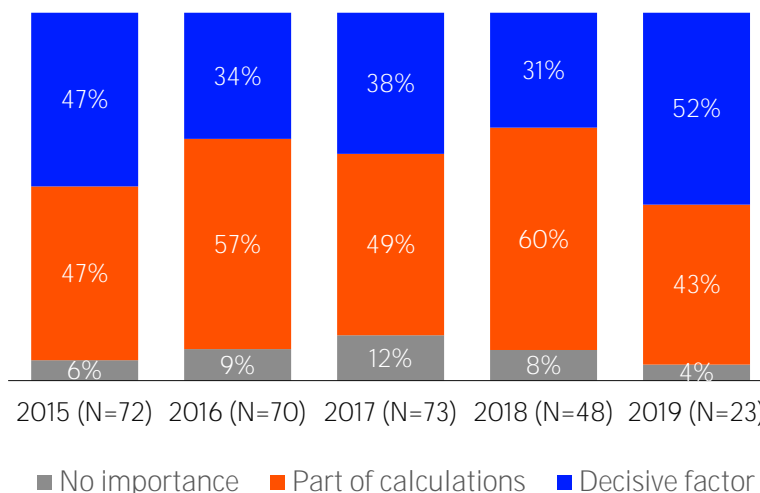
"Has your company moved production/activity outside the EU ETS because of carbon costs?"



Source: Refinitiv

Figure 3.4. Investment effect. Year-on-year

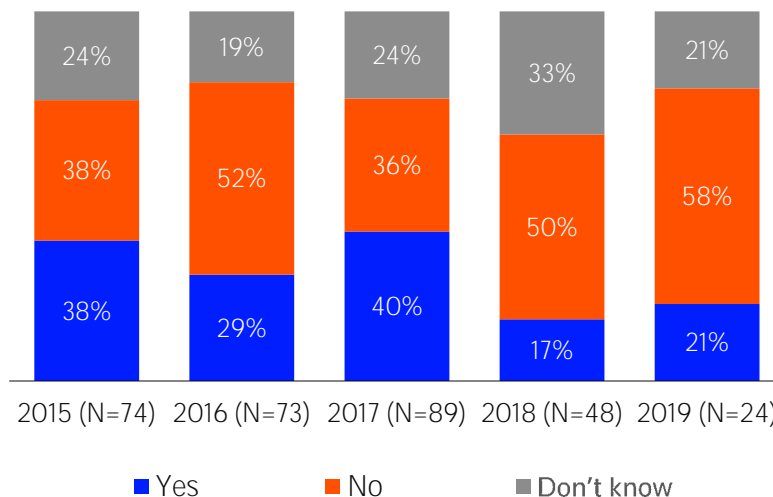
"How important is long-term carbon price for your company's investments?"



Source: Refinitiv

Figure 3.5. Surplus holding

"Does your company currently hold a surplus of EUAs?"



Source: Refinitiv

been lower than allocations, allowing them to accumulate more surplus.

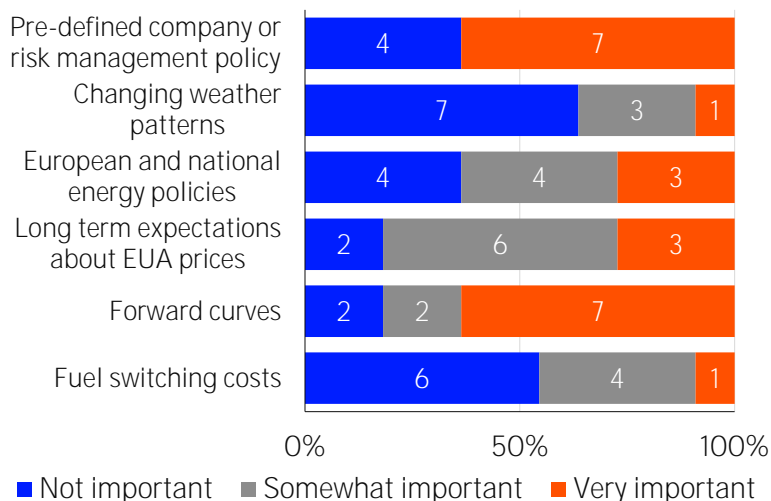
A large number of ETS companies use financial hedging to limit or offset probability of loss from fluctuations in carbon prices. To determine the basis for these companies' hedging strategies, we asked the respondents which factors they consider most important - they could choose from six different elements. Of the 11 responses we received, forward curves and a pre-defined company or risk management policy were the most frequently cited ones, with 64% of the respondents ranking these factors as very important (Fig. 3.6). Respondents considered long-term expectations about EUA prices as well as European and national energy policies somewhat important overall, whereas fuel switching costs and changing weather patterns are seen as less important factors.

Continuing on hedging strategies, we also asked compliance entities about the **time horizon** of their EUA hedging; how far ahead they look when they decide their strategy for selling, keeping or buying EUAs (Fig. 3.7). Survey results reveal highly diverse approaches: of the 11 respondents, 28% hold a position for one year ahead and 18% hedge two and three years ahead, respectively - only 9% hold a position for more than three years ahead. However, more than one-fourth of respondents (27%) do not know/cannot tell about their firms' hedging time horizon. Although one should be careful not to draw firm conclusions from such a small set of data, one interesting finding is that 46% of the surveyed compliance have a relatively short-term approach (two years or less) to their positions in the EUA market.

Another practice related to timing among covered entities is the use of **current-year allowances to account for the previous year's emissions**. This "borrowing" has been employed by industrial emitters to a great extent in the past: with their annual free allocation going into their accounts in February, they sell allowances ahead of that time knowing their holdings will be replenished, and that they can use the freely allocated volume to cover their compliance obligations in April. To examine the prevalence of this strategy among compliance companies, we asked survey participants whether they rely

Figure 3.6. Utilities hedging strategy

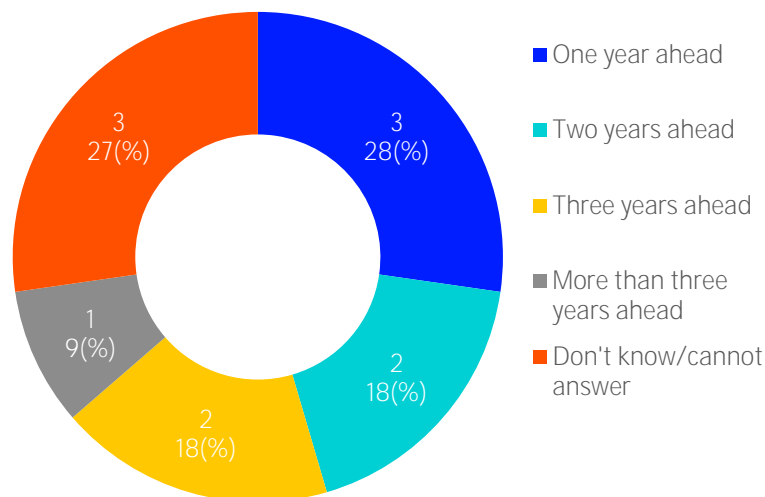
"What factors are important for your hedging strategy?" N=11



Source: Refinitiv

Figure 3.7. Hedging horizon

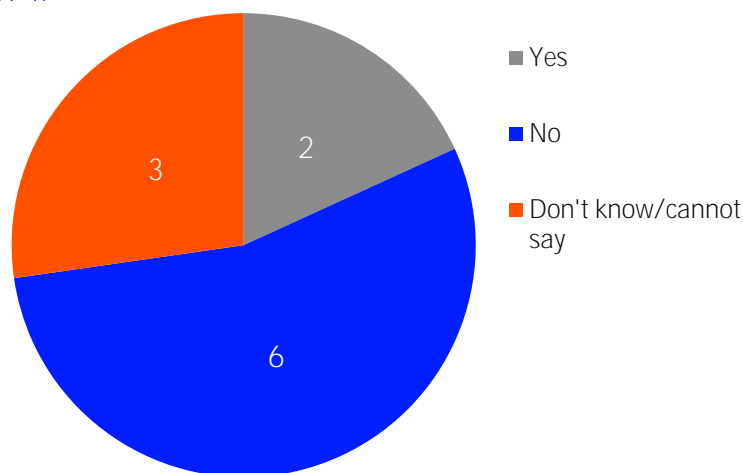
"How far ahead do you look when deciding your strategy for selling/keeping/buying EUAs?" N=11



Source: Refinitiv

Figure 3.8. Use 2019 allocation for 2018 emissions?

"Will you use EUAs from this year's allocation (2019) to cover parts of your 2018 emissions?" N=11



Source: Refinitiv

on EUAs received in 2019 to account for their 2018 emissions (Fig. 3.8). Of the 11 responses we received, 18% replied positively to this question while 27% do not know or cannot say whether they cover last year's emissions with this year's allowances. This leaves room for nearly half of compliance entities to be exposed to the secondary market carbon price volatilities.

Finally, compliance entities were asked about price awareness. Given the low allowance prices over the last decade, firms paid little attention to the carbon market prior to 2018. However, EUA prices have rapidly climbed upwards since mid-2017, and reached an 11-year high in April 2019. This bull run represents an operational cost increase for compliance companies, and 10 out of 11 respondents confirmed that their company has become more aware of its exposure to carbon costs as a result of last year's rally (Fig. 3.9).

B) QUESTIONS ASKED TO ALL STAKEHOLDERS IN THE EU ETS

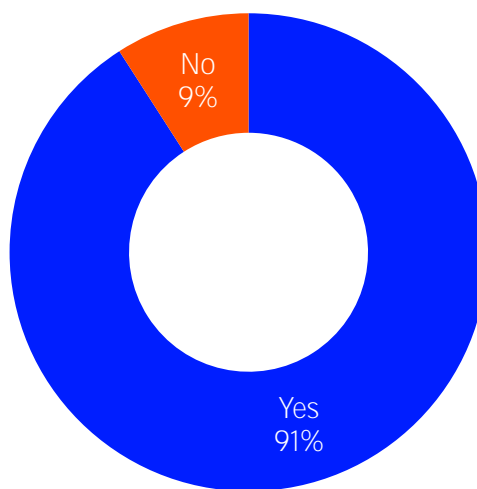
In addition to emitting companies, the survey also addressed other carbon market players in Europe - most notably traders. The general European questions (open to all survey respondent profiles) garnered some 100 responses and are presented in the following section.

There is strong consensus that speculative activity will be a determining factor in setting European carbon prices in 2019. More than 70% of the respondents highlight this as very important and 21% see it as somewhat important, while only 5% consider speculative buying an unimportant driver (Fig. 3.10). A lower auction supply triggered by the MSR² mechanism is also viewed as an important carbon price driver in 2019, with 96% of the respondents highlighting it as a very important or somewhat important price driver - none of the survey participants found it unimportant.

Interestingly, respondents seem the most indecisive on Brexit's role as price driver, with 44% highlighting it as very important and 16% considering it not important in determining 2019 carbon prices. In this matrix question respondents were asked to assign a degree of importance to each of the listed elements.

Figure 3.9. Has price rally raised awareness?

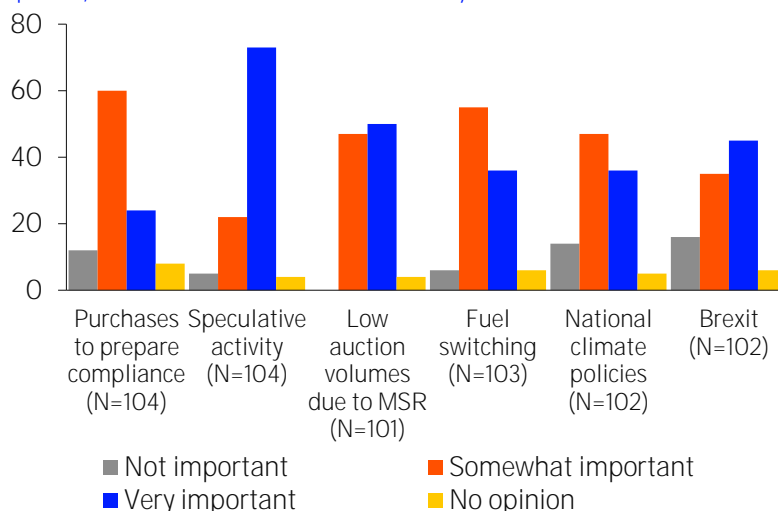
"Has your company become more aware of its exposure to carbon cost as a result of last year's price rally?" N=11



Source: Refinitiv

Figure 3.10. Price drivers

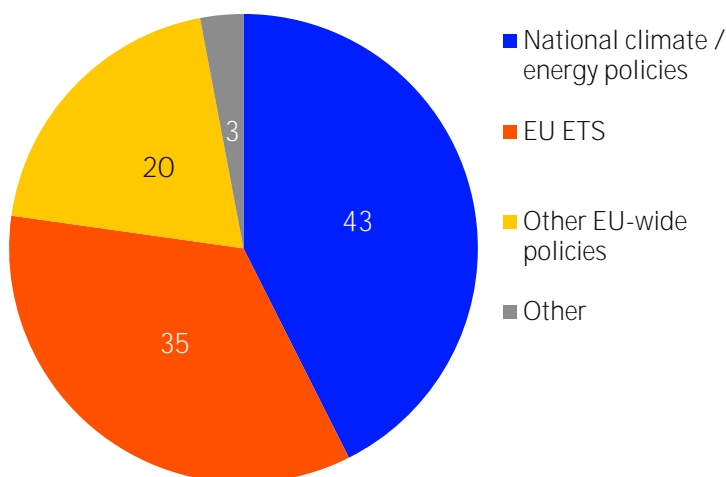
"In your opinion, what will be the main drivers this year?" N=104



Source: Refinitiv

Figure 3.11. Abatement drivers

"What do you think will be the most important driver for European emission reductions in the years to come?" N=101



Source: Refinitiv

Survey participants were asked which policy instruments they see as the most important driver of abatement (emission reduction) over the coming years. The findings suggest that rather than the EU ETS, national climate and energy policies are considered the most important drivers of future abatement: some 43% of the respondents see national initiatives as the main abatement driver, compared to 35% who believe ETS will be the most important (Fig. 3.11). Some 20% of the survey participants consider EU-wide policies beyond the EU ETS the most important abatement drivers in the years to come. This is especially interesting given that the respondent pool is by definition involved in and aware of the EU ETS as a policy tool meant to cut carbon emissions. They were asked to choose one of the listed elements.

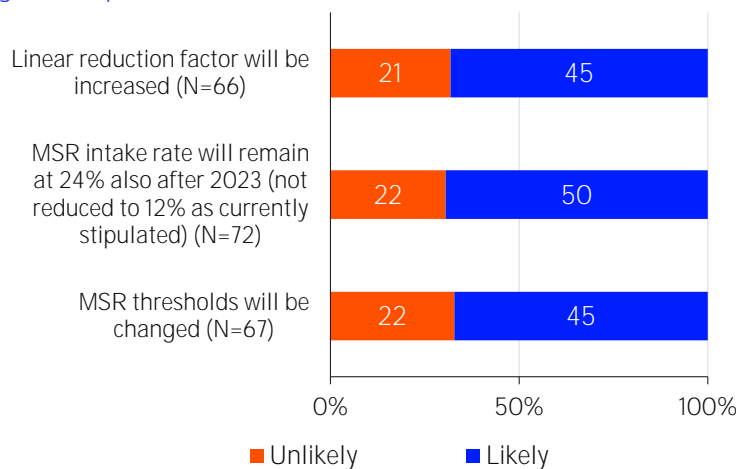
We asked survey participants whether they expect the current EU ETS parameters to remain unchanged after 2020 or whether they anticipate a further tightening of the targets. The results suggest a consensus around the latter (Fig. 3.12). Of the respondents, 68% expect the linear reduction factor (the rate of decline in emission permits brought into circulation) to be steeper. Some 67% believe the MSR threshold will be changed. Another 69% predict the MSR intake rate to remain at a high level (24%) also post 2023 (as opposed to the current plan to adjust it down to 12%).

The idea of a minimum price on carbon emissions - a so-called carbon price floor - has been on the agenda in several European countries during the last years, but so far the UK is the only EU nation that has a carbon price floor. Asked which, if any, European countries will introduce such minimum prices in the near future, most respondents think they are in the works. The Netherlands and France stand out as the countries most expected to introduce a price floor, at 50% and 38%, respectively. Some 26% expect such a mechanism to be applied in Germany. One quarter of the respondents expect no such price floors (Fig. 3.13).

In Germany, a government appointed commission presented a special report in January 2019, recommending the closure of all coal-fired power plants in Germany by 2038. It also recommended the cancellation of as many EUAs as

Figure 3.12. Strengthening the parameters beyond 2020?

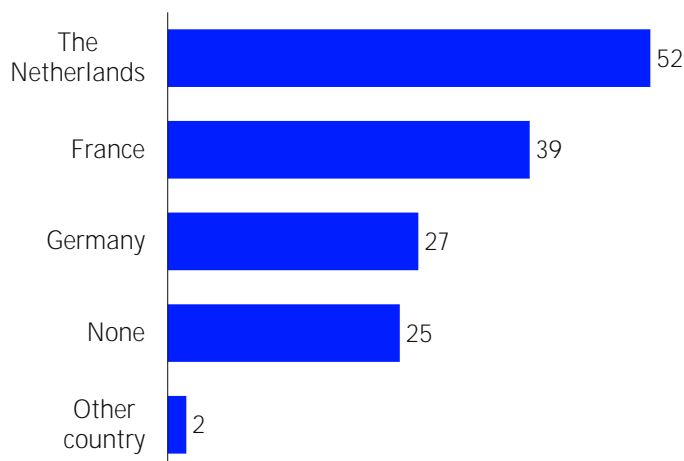
“Independently of the 2050 strategy, the ETS Directive is set to be reviewed during the fourth trading period (2021-2030). What outcome do you see as as most likely for the following EU ETS parameters?” N=72



Source: Refinitiv

Figure 3.13. Carbon price floor

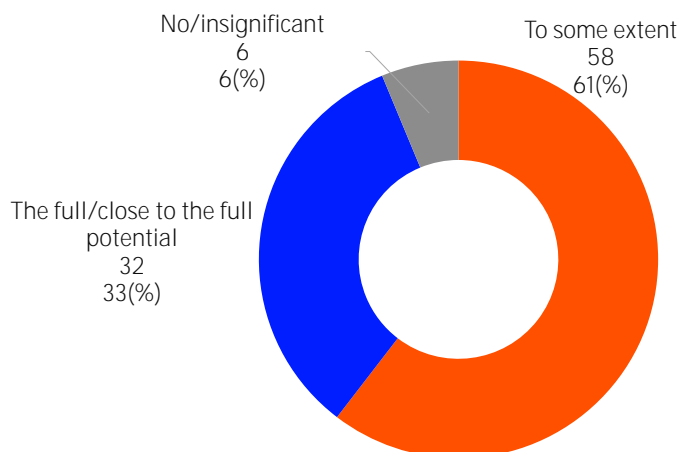
“Which, if any, European state(s) do you think is likely to introduce a carbon price floor by 2020?” N=103 for a total of 145 entries



Source: Refinitiv

Figure 3.14. Some cancellation expected from Germany

“The German coal phase-out commission recommended the cancellation of as many EUAs as possible, to avoid a bearish effect on the market balance. To what extent do you think Germany will actually cancel EUAs between now and 2030?” N=96



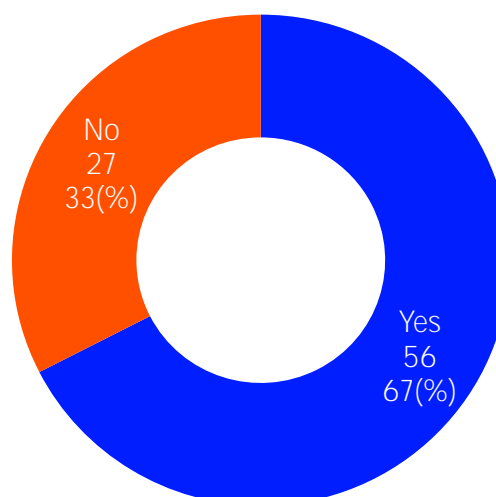
Source: Refinitiv

possible, to avoid a bearish effect on the market balance. We asked the survey participants to what extent they think German policy makers will actually follow this recommendation and cancel EUAs between now and 2030 (**Fig. 3.14**). Of the 96 respondents who answered this question, one-third believe that the country will cancel all redundant EUAs from the diminished coal plant demand, while 6% hold the view that none of the superfluous units will be cancelled. The majority, amounting to 61% of the respondents, believe that some of the German EUA surplus will be pulled out of circulation.

On 28 November 2018, the EU Commission presented a draft strategy paper for a climate-neutral economy by 2050. The strategy aims to put Europe on a path to climate neutrality by investing in technology and achieving emission reductions in key areas such as power generation, industrial processes and transport. Various scenarios also incorporate carbon capture technologies. The draft paper went through a first round of discussion in the European Parliament this winter, and is currently being debated among the member states in the Council. A final decision is expected by the end of 2019. The majority of our survey respondents who answered the question on this issue (83, or 67%) believe the 2050 climate targets will also lead to a tightening of the existing 2030 targets. The remainder believe that the current 2030 targets will remain unchanged (**Fig. 3.15**).

Figure 3.15. Tighter 2030 targets as result of 2050 discussion?

“Do you think the 2050 strategy will lead to the adoption of a more ambitious target for 2030?” N=83



Source: Refinitiv

¹The survey question's wording was slightly different in the years up to and including 2018, when the option read "the EU ETS is detrimental to our competitiveness."

²MSR stands for the Market Stability Reserve introduced in January 2019 to absorb some of the surplus of allowances in the EU ETS. The uptake (and eventually the release) of volumes is based on pre-defined and predictable criteria. As of today the MSR contains the allowance volumes that were withheld in 2014, 2015 and 2016 (backloading) and parts of the volumes originally meant to be auctioned in 2019).

4. AVIATION

Since the International Civil Aviation Organization (ICAO) approved the Carbon Offsetting and Reduction Scheme for international aviation emissions (CORSIA) back in October 2016, we have been following closely the development of this mechanism that is set to host significant purchases of emission credit units on the part of airlines. CORSIA has a potential for becoming one of the worlds’ biggest carbon markets once it becomes operational (voluntary phase) in 2021. The scheme’s future demand/supply balance depends on the number of countries that join (the demand side) and on which types of offsets ICAO will deem eligible (supply).

ICAO provided some clarity on offset eligibility rules in early 2019, when its Council agreed on a document that outlines so-called Emission Unit Criteria (EUC). The ICAO Technical Advisory Body (TAB) will now apply those criteria to the standards asking to be eligible.

CORSIA SEEN AS RELATIVELY PROMISING

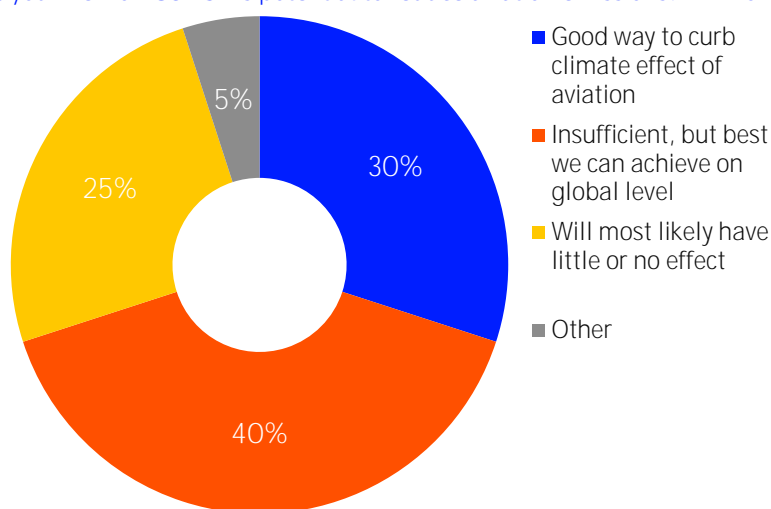
Establishing CORSIA was in itself a tough process of international negotiations. Many ICAO member countries with huge aviation emissions – especially emerging markets – are opposing abatement measures that might curb their air carriers’ growth prospects. Many observers, on the other hand, criticize CORSIA for lacking ambition.

Some 20 respondents answered the aviation related part of our survey. Of these, slightly less than a third think CORSIA will be a good way to curb the climate effect of international aviation. A larger share of respondents (40 percent) believe that the scheme is insufficient, but the best that can be agreed globally (Fig. 4.1). One-fourth of respondents think it will have little or no effect at all on emissions.

NEW OFFSET UNITS, REDD AND CERS SHOULD QUALIFY

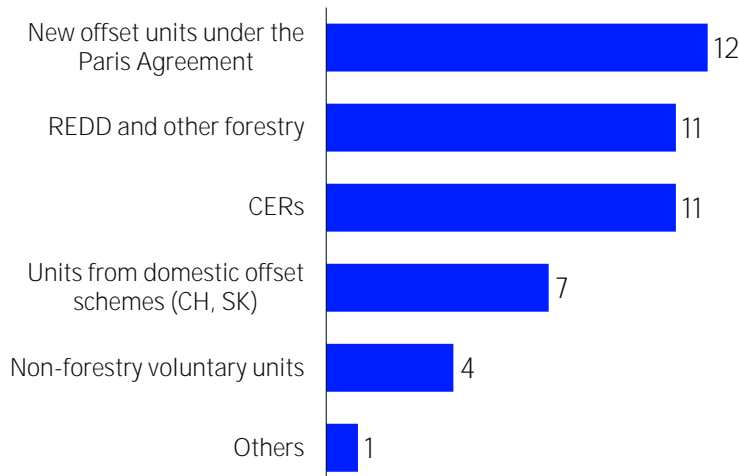
For the second year in a row, we asked what kind of offsets our respondents consider likely to be eligible under CORSIA (Fig. 4.2). This question allowed multiple answers. More than half of the 19 respondents to this question believe

Figure 4.1. CORSIA efficiency
 “What is your view on CORSIA’s potential to reduce aviation emissions?” N=20



Source: Refinitiv

Figure 4.2. CORSIA units’ eligibility
 “What kind of offset units do you think will be eligible in CORSIA?” N=19 for a total of 46 entries



Source: Refinitiv

that new offset types under the Paris agreement, REDD/forestry offsets, and CERS have a good chance of being eligible. Interestingly, this year CERS came in second (together with “REDD and other forestry” category) in terms of expected eligibility - they were considered most likely to be eligible in the 2018 survey, with 22 out of 27 respondents to the CDM section expecting CERS to be accepted under CORSIA back then. Respondents appear to be losing confidence in the viability of CERS as an eligible offset type for international aviation.

RESPONDENTS EXPECT THE EU TO ACCEPT CORSIA...

The deadline to set CORSIA details is drawing near, as the voluntary phase starts in January 2021. Some 79 countries have pledged to join from the beginning, meaning that their air carriers must offset emissions above the baseline from then onwards. The EU, however, has its own system for dealing with aviation emissions, namely by obliging airlines to report emissions and surrender allowances (EUAs) under the EU ETS. As of now this system covers all flights within European

airspace, but not flights to/from other continents.

This means EU lawmakers must decide whether and to what extent to adjust their own legislation to fit with CORSIA. They could (1) accept CORSIA as the sole system for aviation emissions (suspend the aviation sector from the EU ETS), (2) accept CORSIA for flights to/from Europe, while keeping intra-European flights in the EU ETS, and (3) reject CORSIA altogether, covering all flights to/from and within Europe under the EU ETS. In our view, the first scenario is unlikely because of European scepticism towards a system perceived as too weak, the third is unlikely given the strong opposition from other countries such as the U.S., China, and India.

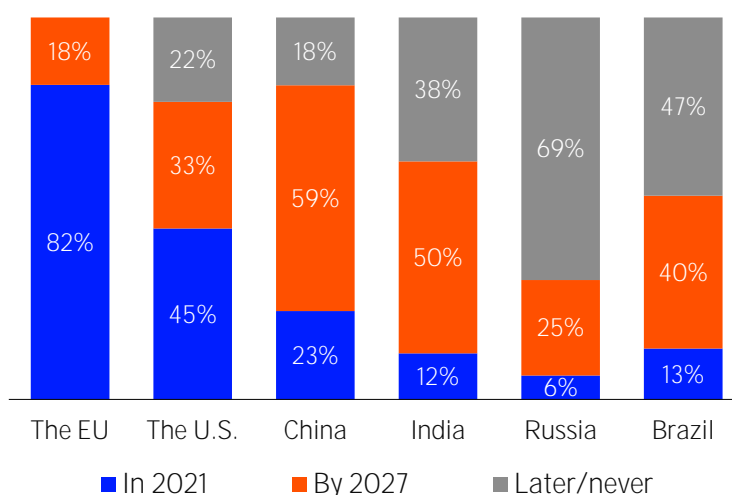
EU lawmakers must decide on their approach before 2021. They will review CORSIA to assess if it is in line with Europe's general climate ambitions. Senior voices, especially in the European Parliament, argue that CORSIA does not achieve enough emission reduction in the aviation sector, and favour covering international flights coming into EU territory under the EU ETS instead. This would reduce CORSIA's already low initial participation rate.

For the second year in a row, we asked respondents what they see as the most likely situation for flights between Europe and other CORSIA member states beyond 2023. A large majority (72 percent) believe the routes between Europe and third countries will be covered by CORSIA, meaning the EU will accept the scheme's ambition and be part of it from 2021. Last year, nearly half the respondents thought CORSIA's targets and rules would not satisfy the EU. ICAO's recent publication of scheme details and the launch of emission monitoring and reporting for all parties as of 2019 may have contributed to respondents' perception of progress on CORSIA in this respect.

...AND THAT BRIC COUNTRIES WILL NOT JOIN ANYTIME SOON

As of March 2019, [80 states](#) all over the world representing close to 77 percent of international aviation emissions, intend to voluntarily participate in CORSIA from 2021. However, several countries with high

Figure 4.3. CORSIA acceptance by different countries
 "When you do think the following countries will start participating in CORSIA?" N=18



Source: Refinitiv

shares of global aviation emissions (China, India, Russia and Brazil) have not pledged to require their air carriers to offset emissions growth from that date - it is not even clear if they will join at a later stage.

We asked our respondents about timelines for key aviation emitters to join ICAO's scheme (Fig. 4.3). A large majority (82 percent) believe the EU will be in from 2021, whereas the percentage believing the U.S. will participate in the first voluntary phase is much lower (45 percent). While no respondents expect the EU not to participate in CORSIA, over one-fifth think the U.S. will participate only after 2027 or not at all - one third of respondents think the U.S. will join the programme before its mandatory phase begins in 2027.

Few respondents expect any of the BRIC countries to participate in the first voluntary phase of CORSIA. However, more than 80 percent think China will require its air carriers to offset emissions from international flights before that requirement becomes mandatory in 2027 - for India, just over 60 percent think CORSIA participation will begin before the mandatory start. Respondents were most sceptical about participation of Russia, with nearly 70 percent saying the country would not participate in the scheme by the mandatory start date - or ever.

5. NORTH AMERICA

Out of 165 respondents, only a limited number declared interest in North American markets: 19 in WCI, 18 in RGGI, and 6 in the Mexican emission market.

Only four of the 14 questions about these markets received more than one response - survey results in this area are thus largely inconclusive. The following are explanations of the three survey questions that did get enough responses to merit mentioning.

Of those who cited involvement in the WCI, all answered the question about what will dominate secondary allowance trading this year - most think a mix of compliance buyers (emitters seeking to cover their GHG output) and speculators (traders and other non-covered entities) will account for the traded volume.

The other WCI question that received enough responses (12 out of the 19 involved in the WCI) to constitute a representative answer was the one about auction participation: nearly all respondents expect auctions this year to sell out.

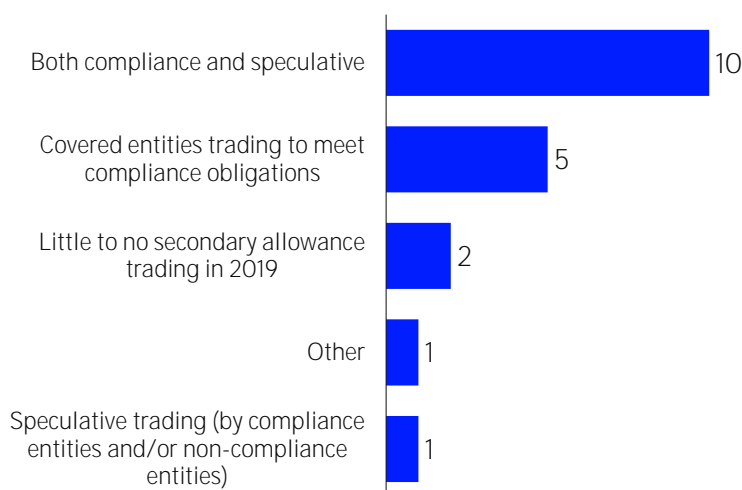
This is in line with the trend of fully subscribed or oversubscribed quarterly auctions since summer 2018, as opposed to the undersubscribed auctions in H1 of 2017 whose unsold allowances went back into the pool and are being added to this year's auction volume.

The only question regarding RGGI that received enough responses to be significant (two-thirds of those who said they are involved in the RGGI market) is the one regarding new jurisdictions. Respondents were split exactly 50-50 on this issue, with one half saying the programme will not include additional states and the other half saying new states will join - for the latter, the most likely candidates cited were Virginia and New Jersey. Those two states are in fact in the process of implementing measures to join (or in New Jersey's case, re-join) the east coast ETS.

As for Mexico, two-thirds of those who said they follow carbon pricing developments there answered the one question related to Mexican climate policy. Given that Mexico was supposed to start a three-year pilot ETS in early 2019, but saw its launch delayed to January 2020, we asked when respondents think the programme's mandatory phase will start. Half the respondents to this question think the new timeline will be upheld and the programme will become mandatory in 2023, whereas one fourth think it will happen one year later in 2024 and the remaining fourth think Mexico will never have a mandatory ETS.

Figure 5.1. WCI market

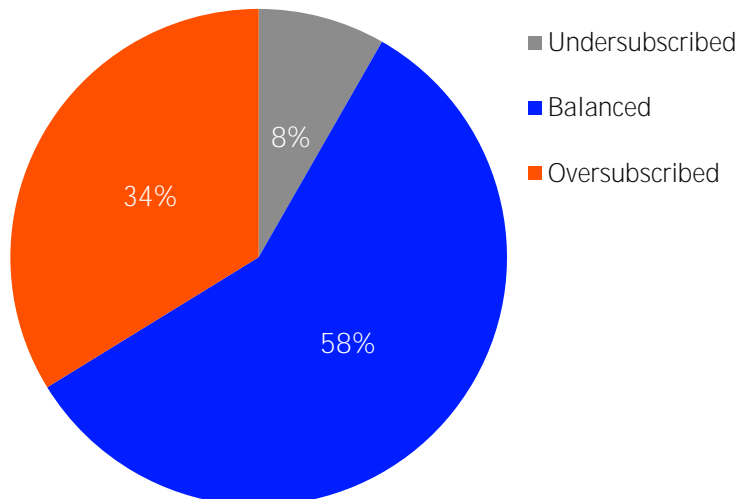
"In your opinion, what will dominate secondary WCI allowance trading in 2019?" N=19



Source: Refinitiv

Figure 5.2. WCI primary sales

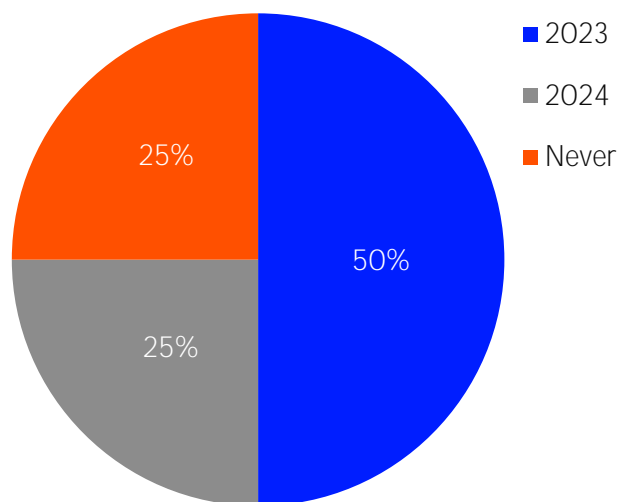
"The WCI allowances auctions for the rest of 2019 will be..." N=12



Source: Refinitiv

Figure 5.3. Mexico ETS expected start date

"Mexico was supposed to start a 3-year pilot ETS in early 2019, but the launch was delayed to Jan 2020. When do you think the mandatory phase will start?" N=4



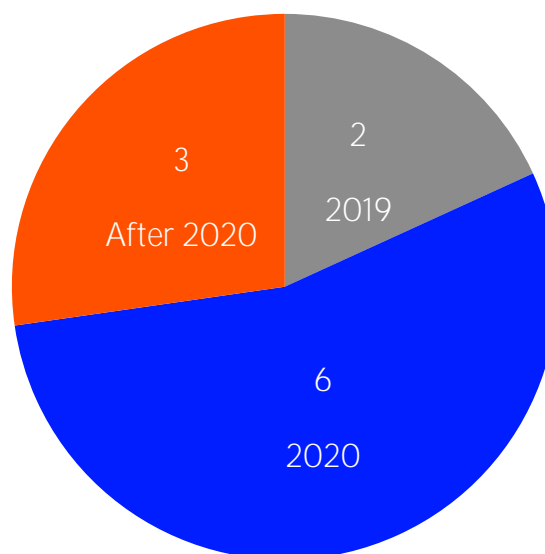
Source: Refinitiv

6. CHINA

Carbon market players keep watching developments in China, partly because the country is home to eight regional pilot emission trading schemes that for several years have been testing different rules and parameters (Shenzhen, the oldest one, started in 2013). Collectively they are worth some €165 million. Partly the interest is warranted by the ongoing process of creating a national (nation-wide) Chinese ETS. It was officially launched in December 2017, but is de facto still being set up. With its huge population, numerous coal power plants and extensive heavy industry, a Chinese national ETS is easily the biggest carbon market in the world in terms of covered emissions. Measured in terms of traded volume and value, China is still very far from Europe and other established markets such as the WCI and RGGI.

Figure 6.1. Nation-wide Chinese carbon market

“The Chinese government has announced the start of its nation-wide emission trading scheme. When do you think market trading will start?” N=11



Source: Refinitiv

NATIONAL ETS TRADING SOON?

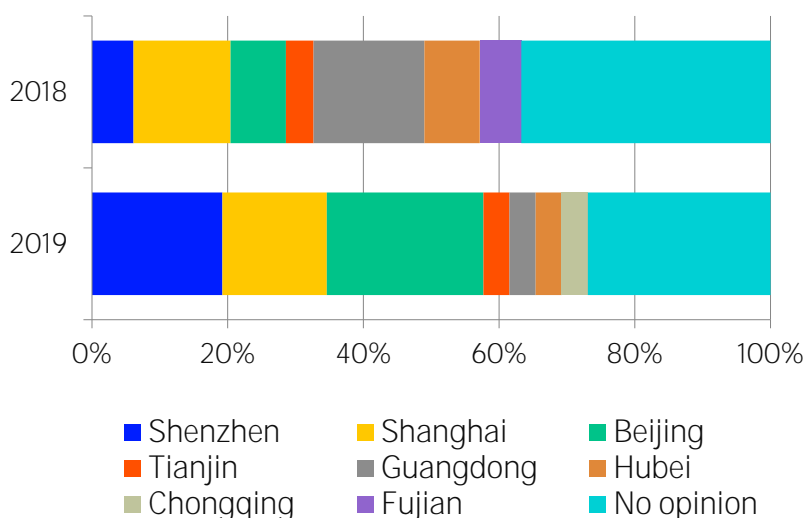
We asked respondents when they expect to see actual trading in this national market. The vast majority (nearly 75%) of the 11 respondents to this question think trading will begin this year or next (Fig 6.1).

BEIJING, SHENZHEN, AND SHANGHAI CONSIDERED BEST

The question about China’s existing carbon markets (which ones are most successful in terms of market setup and operation) was answered by 14 respondents, but allowed for multiple answers and thus counted 26 responses overall. The Beijing ETS ranked first, followed by Shenzhen and Shanghai - this marks a departure from last year, when Guangdong’s ETS was ranked most successful followed closely by that of Shanghai and Hubei as distant third. Combined across the two years, these responses indicate that stakeholders consider Shanghai a consistently successful pilot market (Fig 6.2). That in turn bodes well for parts of the upcoming Chinese national programme’s infrastructure, as the trading platform for Shanghai’s pilot market (Shanghai Environment and Energy Exchange) is the entity responsible for developing the national trading platform.

Figure 6.2. Chinese pilot schemes

“Which pilot scheme(s) do you see as (most) successful in terms of market setup and operation?” N=14 for a total of 26 entries



Source: Refinitiv

LOW PRICES EXPECTED

The 12 respondents who offered expectations of prices in the national market in its first year of operation ranged from 5 to 25 RMB per unit, averaging 14.25 RMB (€1.9).

7. AUSTRALIA

This year we are not able to cover the carbon market of New Zealand due to the low response rate in the Kiwi section of the survey.

Australia does not have an emission trading scheme. Instead the country is home to two emission reduction policies: **the Safeguard Mechanism (SM)** and **the Emission Reduction Fund (ERF)**. The SM sets emission intensity benchmarks for companies and those whose emissions per unit of output (not total emissions) exceed the prescribed baseline must offset the difference with domestic emission reduction credits (ACCUs). The ERF has been buying ACCUs via auctions on behalf of the Australian government since early 2015. Australia’s power sector policy known as **the National Energy Guarantee (NEG)** was rejected by the ruling coalition.

RENEWABLE GENERATION AND ERF – KEY REDUCTION DRIVERS

When asked which mitigation tool is most effective at reducing emissions, Australian respondents cite renewable power generation, followed by the ERF purchases (Fig. 7.1). The existing SM and a scenario in which the NEG is re-introduced were deemed less conducive to emissions reductions. Indeed, the SM’s intensity baselines are so lax that all the companies covered by the SM that reported on their 2016–2017 emissions last year stayed below them.

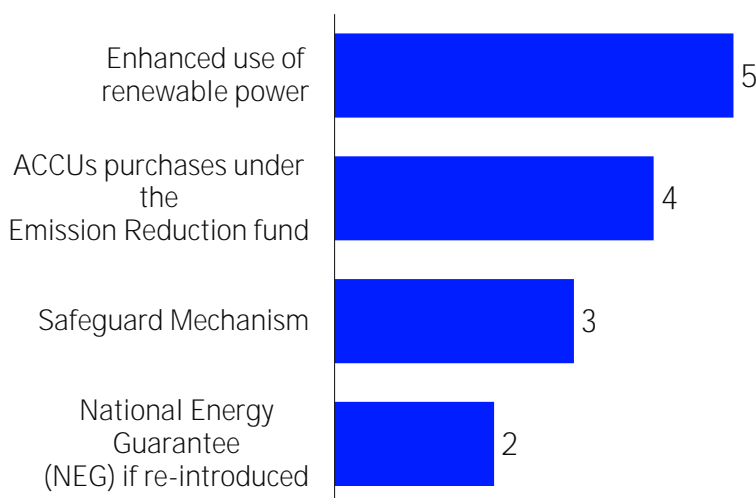
The ERF has already spent over 90 per cent of its budget. However, the ruling coalition plans to replenish the ERF by A\$2 billion over 15 years, which may account for respondents’ view of it as more likely to reduce emissions than the SM or NEG.

OPPOSITION DEEMED TO ENHANCE CLIMATE POLICIES

Australia is likely to miss its Paris target by about a billion tonnes CO₂e without additional climate policies. Current leaders, however, claim the country can meet its target under existing measures. The outcome of Australia’s **federal election in May 2019** may change its climate policy drastically, as the poll-

Figure 7.1. Australia climate policy efficiency

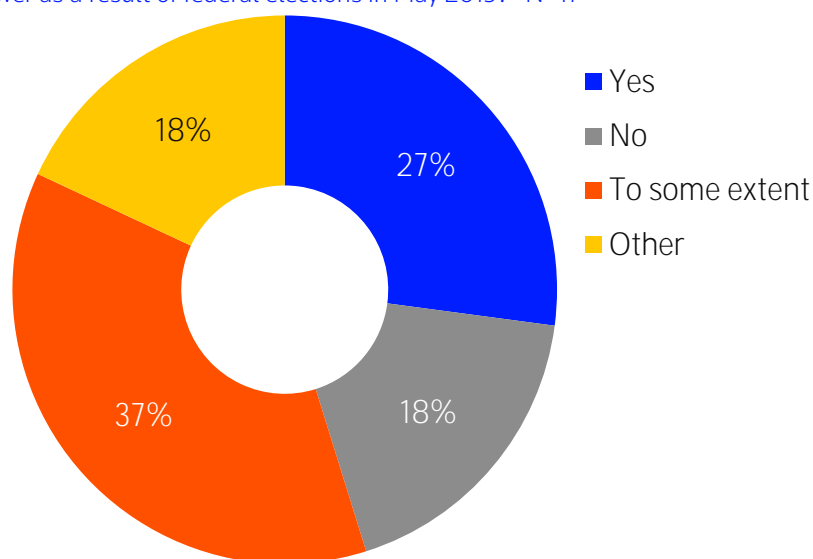
“Which if any of the following policies will lead to emissions reductions?” N=9 for a total of 14 entries



Source: Refinitiv

Figure 7.2. Outcomes of federal election and its impact on climate policies

“Do you consider Australia will tighten its climate policies if the opposition comes to power as a result of federal elections in May 2019?” N=11



Source: Refinitiv

leading Labour party aims to increase the ambition of Australia’s target under the Paris accord and introduce a baseline-and-credit scheme based on the SM with tougher reduction targets.

In our second Australia question on the upcoming elections, (Fig. 7.2) we asked whether a Labor victory would herald a shift towards more ambitious climate policies in Australia. One-fourth of respondents believe so, 37% think that is true to some extent, an 18% think not.

8. CDM

Trading of Certified Emissions Reductions (CERs) under the Clean Development Mechanism (CDM) continues at a slow pace, with few new projects registering to enter the UN's project pipeline. Few CERs are being issued, and demand continues to be limited given the lack of certainty about what will happen to the CDM after 2020. CER prices remained almost unchanged from the same period in 2018 – just below 20 eurocents per tonne, far from sufficient to attract investors and spur new projects. Many renewables projects in developing countries registered under CDM see CER revenue only as a bonus, not the main source of profit.

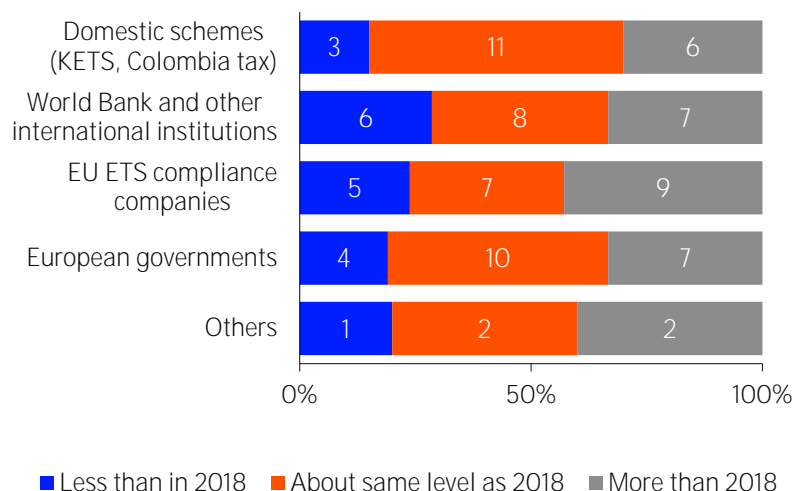
European companies subject to the EU ETS and European governments - the groups that used to be the main buyers of CERs - have a limit on the extent to which they may use offsets to meet emission reduction obligations. They have collectively almost exhausted that limit. From 2020, these entities will no longer have offsetting as an option for complying with their emission targets.

With the two major sources of demand practically gone, CDM project developers are hoping and searching for emerging, alternative sources of demand. Most notably ICAO's CORSIA (offsetting scheme for international aviation operators) and governments seeking to use internationally tradable credits for compliance to their commitments post-2020 under the Paris Agreement. Market experts predict 2–3 billion tonnes demand from CORSIA between 2021 and 2035. The demand for Paris compliance is highly uncertain, as only a few countries have expressed willingness to use international offsets in their carbon budgets. Furthermore, it is still unclear if CERs would "survive" under the new agreement.

The CDM part of the survey received 24 responses in total, providing a view on the current and future role of the mechanism.

Figure 8.1. Demand for CERs

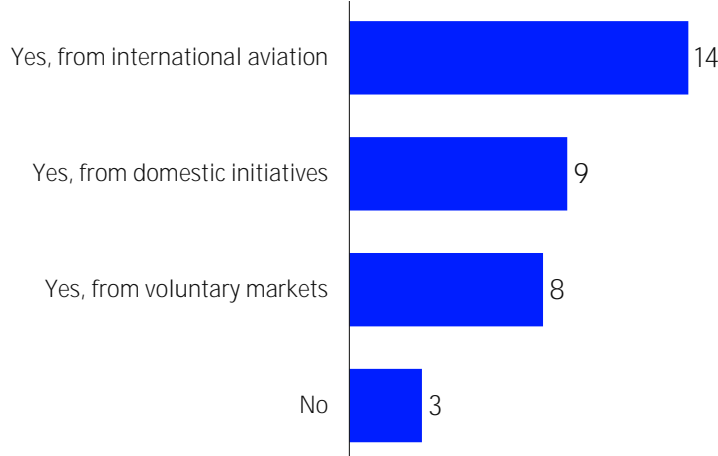
"How do you see annual demand from various groups of CER buyers in 2019?" N=21



Source: Refinitiv

Figure 8.2. New sources of demand

"Do you see any potentially important new sources of demand for CERs between now and 2021?" N=24 for a total of 34 entries



Source: Refinitiv

CER DEMAND FOR DOMESTIC SCHEMES EXPECTED TO BE CONSTANT IN 2019

Asked how they view the existing sources of demand and their expectations for the rest of 2019, a clear majority (17 out of 21 who answered this question) think countries' domestic carbon pricing programmes (like South Korea's ETS and Colombia's carbon tax) will offer the same or higher demand this year vs. 2018. Market players also expect the World Bank and other international institutions to continue purchasing CERs this year (Fig. 8.1).

Despite the above-mentioned near exhaustion of Europe's CERs usage limit for the EU ETS companies, many

respondents still believe EU emitters will buy more CERs this year than last. Most respondents also believe EU governments will keep buying CERs in 2019 the same way they did last year.

AVIATION SECTOR TO CREATE MAJOR DEMAND

Similar to previous years, we asked respondents about potential new sources of demand for CERs between now and 2021 (Fig. 8.2). Similar to the 2018 survey, the CORSIA scheme for offsetting emissions from international aviation is considered a key source of demand for CERs. Up to now, we have not witnessed any pre-compliance trading, as airlines are probably cautious to purchase offsets

before the eligibility rules are clearly defined. No one wants to buy units that might end up being deemed invalid. Technical bodies within ICAO determine offset eligibility rules (see aviation section of this report for details), with different offset standards being considered on a case by case basis over the course of this year and beyond.

Domestic initiatives and voluntary markets are considered almost the same in terms of potential for offset demand. We assume the respondents refer specifically to CER cancelation and further CER use in compliance to domestic carbon pricing programmes (e.g. emitters covered by Korea's ETS and Colombia's carbon tax). Out of 40 Mt CERs cancelled to date, close to 60% were earmarked for Colombian and Korean markets.

WILL CDM EXIST AFTER 2020?

Article 6.4 of the Paris Agreement intends to replace the CDM with a new mechanism. The annual climate conference in December 2018 saw delegates discuss how/whether to carry over generated offset units and/or CDM projects and methodologies, but did not result in a decision on this matter. Formal talks on the carbon mechanism will resume in June (the mid-year UNFCCC session in Germany), with the final rules to be negotiated at the next summit in Chile this coming December.

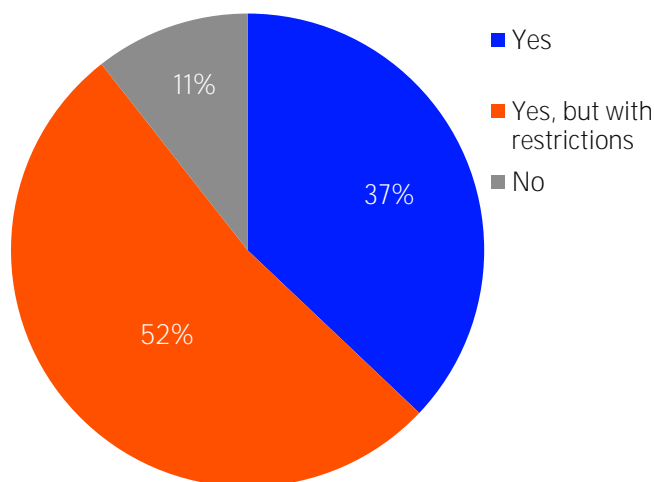
Just over half of the survey respondents who answered the question about the fate of the CDM under the new Paris framework (**Fig. 8.3**) think it will continue in some form after 2020, albeit with some restrictions. Such restrictions could pertain to CERs' vintage (limiting the years in which they can have been generated, no "old" Kyoto units) and/or project type restrictions (banning projects seen as controversial, such as HFC23 or N2O adipic acid) to avoid flooding the global market with "low quality" CERs.

NO NEW MARKET RULES BY 2021

The rulebook agreed at the 2018 COP in Katowice, Poland left important issues on carbon trading post-2020 pending, including rules on double counting, eligibility of REDD (avoided deforestation) projects, and the exact share of proceeds

Figure 8.3. Paris Agreement and CERs use

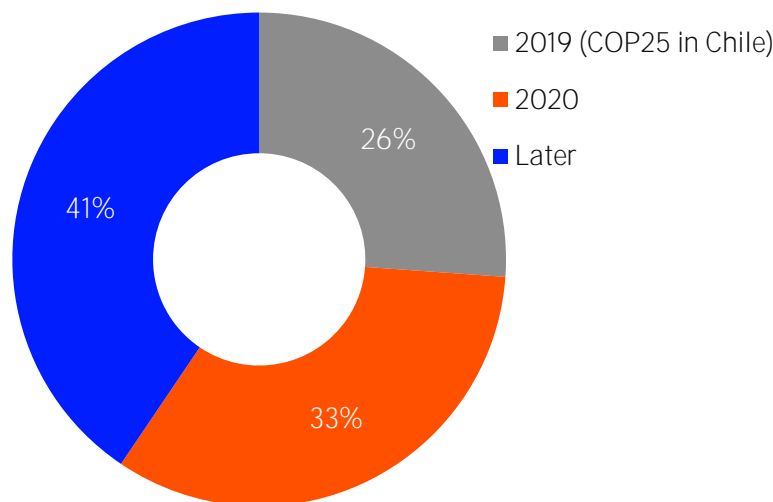
"Do you expect CERs to be eligible under the new mechanism in the Paris Agreement (Art 6.4)?" N=19



Source: Refinitiv

Figure 8.4. Post-2020 rules readiness

"When do you expect the rules on new global markets will be finalised?" N=111



Source: Refinitiv

from the carbon sales that should go into the adaptation fund.

Survey respondents' expectations of clarity on these issues from the forthcoming summits or Conferences of the Parties (COPs) are very low (**Fig. 8.4**). Most of the 111 respondents to our question about finalisation of global carbon market rules do not think such rules will be adopted under the Paris Agreement meetings. Over 40% think the rules will not be finalised before 2021.

This continued uncertainty about the rules makes for a global carbon market that remains in limbo for another year or more, meaning countries and private players in the carbon market will not be able to plan

their longer-term carbon-related activities. Delays at the UN level on the terms and rules of trading in turn delay other emerging markets, such as the one for aviation emission offsets under CORSIA: ICAO's rules about offset eligibility depend in part on the global carbon trading principles of the UN Article 6, and thus cannot be finalised until those are decided.

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