

April 26, 2022

2022 State of the EU ETS

Stakeholder consultation

ERCST

Roundtable on
Climate Change and
Sustainable Transition

BloombergNEF

ecoact
an atos company



1. Background

State of the EU ETS Report is meant to be a “snapshot”

- Provides policymakers and stakeholders with an overview of how the EU ETS is doing by April of each year, based on previous year data.
- **2022 Context:**
 - Covid-19
 - Fit for 55 package
 - COP26 outcome on Article 6 rule book
 - Rise in carbon and energy prices
 - War in Ukraine
 - Global stocktake in 2023

2. An EU ETS “fit for purpose”

What do we expect the EU ETS to deliver?

3 key deliveries:

1. **Environmental delivery.** Does it deliver against absolute environmental targets?
2. **Socio-economic delivery. Macro-economic efficiency** and cost effectiveness for compliance. Does it provide effective, and proportional, **protection against** the risk of **carbon leakage**? Is it a **driver for change**? Does the EU ETS ensure a **just transition**?
3. **Market functioning.** It is worth having a market only if it **functions well** and leads to **good price discovery**?

Implicit expectations:

1. Contributes to long-term competitiveness
2. Promotes carbon pricing

2022 State of the EU ETS - outline

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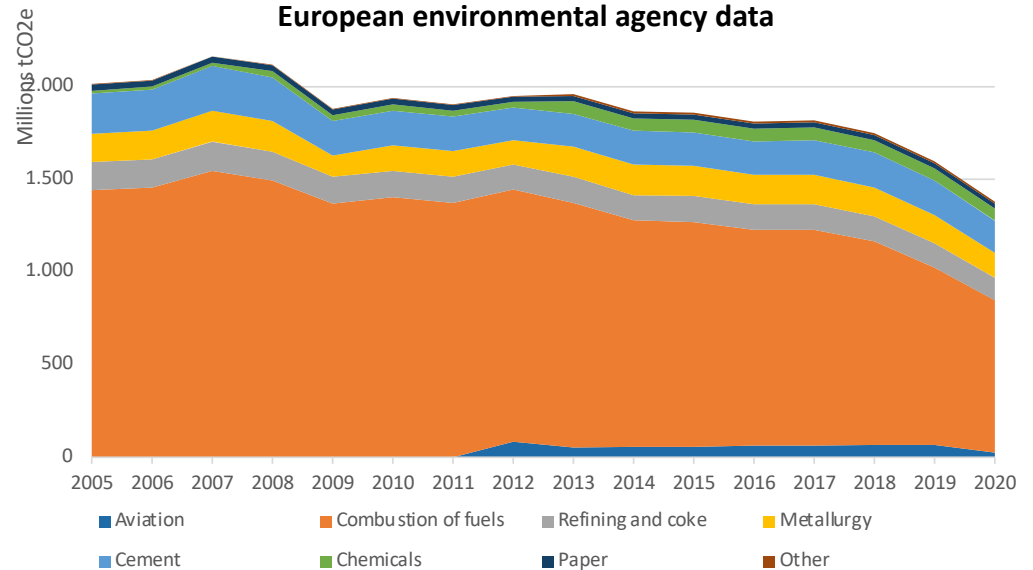
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3. Phase 3: a comprehensive analysis

3.2. Climate Delivery

- The Phase 3 EU ETS reduction target of – 21% in 2020 (compared to 2005 levels) has been achieved since 2014.
 - CO2 emissions fell by 29% in Phase 3 (2013-2020) for all stationary installations (20% from 2013 to 2019), driven by the combustion sector.
 - The largest annual decrease of emissions took place from 2019 to 2020 due to Covid : -11% compared to -5% on average in Phase 3.
- During Phase 3, several signals demonstrate the start of the decarbonization :
 - The carbon intensity of combustion plants decreased by around 30% from 2013 to 2019.
 - In other installations : modest but consistent decrease in the carbon intensity of production.

Verified emissions by ETS sector, data: Ecoact based on European environmental agency data



Note: The combustion sector not only includes electric utilities, but also combustion plants of other sectors falling over the 20 MW participation threshold

3. Phase 3: a comprehensive analysis

3.3. Economic Delivery

- Breaking down the yearly permit deficit unveils significant variations between ETS sectors : combustion plants had to buy the bulk of allowances in auctions, while process emissions could be covered by free allocation to a large extent.
 - Results change when considering the banking flexibility, as process emissions of all sectors except refining and coke could have been covered by the permit bank built up since 2013, provided banked allowances remained in account holders’ hands.
- In aggregate, the effective carbon cost was multiplied seven-fold from 2013 to 2020, due to the phase down of free allocation and increasing EUA prices. It is highest in aviation, combustion installations and process installations of the refining and coke sectors.

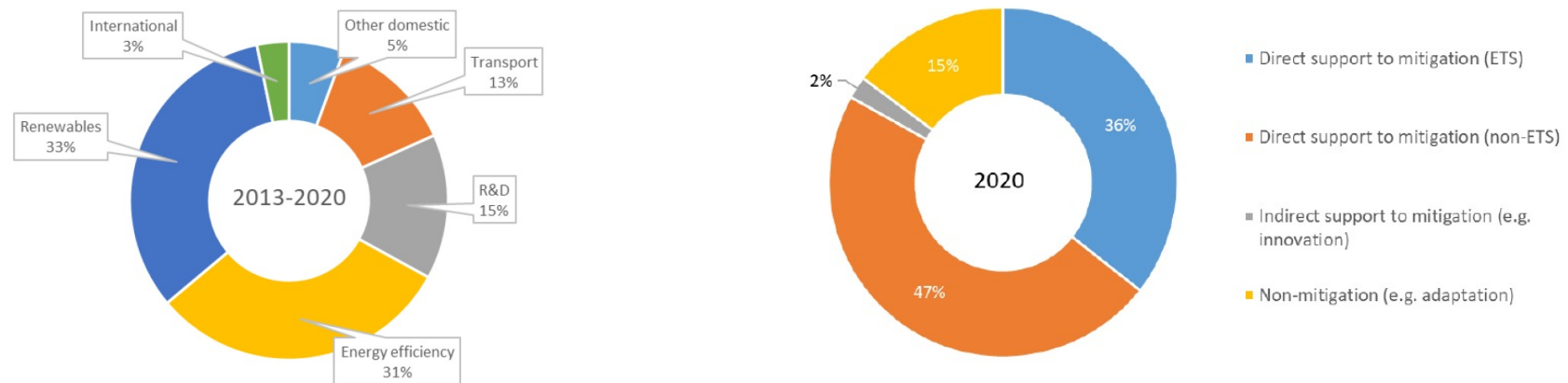
Yearly allowance surplus (green) and deficit (red) in Phase 3 by ETS sector, in percentage of the sector’s verified emissions. Source: Ecoact based on EEA

		2013	2014	2015	2016	2017	2018	2019	2020
Combustion of fuels	All Sectors	-73%	-74%	-78%	-80%	-83%	-84%	-84%	-85%
	Refining and coke	-17%	-16%	-20%	-22%	-22%	-22%	-23%	-19%
Process emissions	Metallurgy	26%	22%	20%	21%	17%	15%	18%	26%
	Cement	16%	4%	4%	3%	-2%	-6%	-5%	-1%
	Chemicals	11%	9%	2%	2%	-2%	-1%	-2%	-2%
	Paper	19%	20%	16%	12%	7%	6%	6%	9%
	Other	40%	32%	18%	8%	0%	-7%	8%	18%
	All stationary installations exc. combustion	11%	6%	3%	3%	-1%	-3%	-2%	2%
Aviation		-40%	-41%	-44%	-49%	-49%	-55%	-56%	21%
Total		-47%	-48%	-51%	-52%	-55%	-55%	-53%	-49%

3. Phase 3: a comprehensive analysis

3.3. Economic Delivery

- In 2020, Member States spent most of their reported revenues on direct support, i.e., on the installation of technologies that reduce emissions (e.g., renewables).
 - Around 60% of the EU ETS revenues in 2020 was used in non-EU ETS sectors.
- In 2020, revenues from ETS auctioning are mainly used to develop renewable energy to meet the EU’s target (northern and southern Europe), encouragement of a shift to low-emission and public forms of transport (central and eastern Europe), energy efficiency measures (eastern Europe). An important share goes to other domestic GHG reduction measures.



Reported share per sector and type of support spent on climate change and energy domestically (incl. planned) in 2020, EU 27

Source : EU Climate Action Progress Report 2021

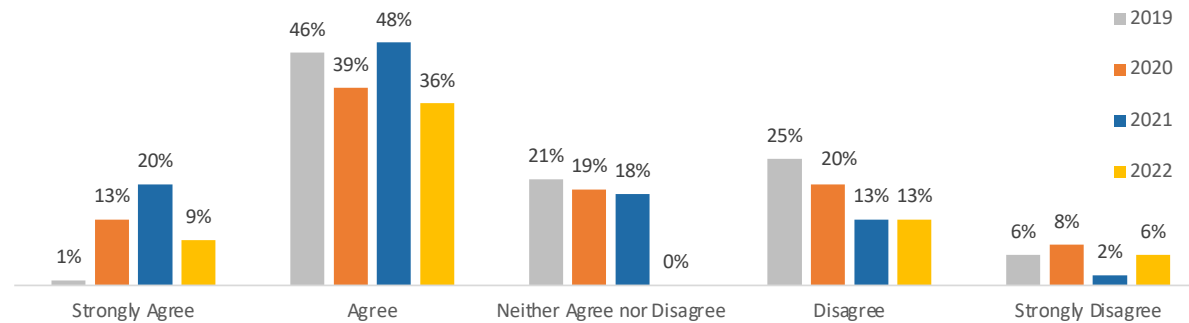
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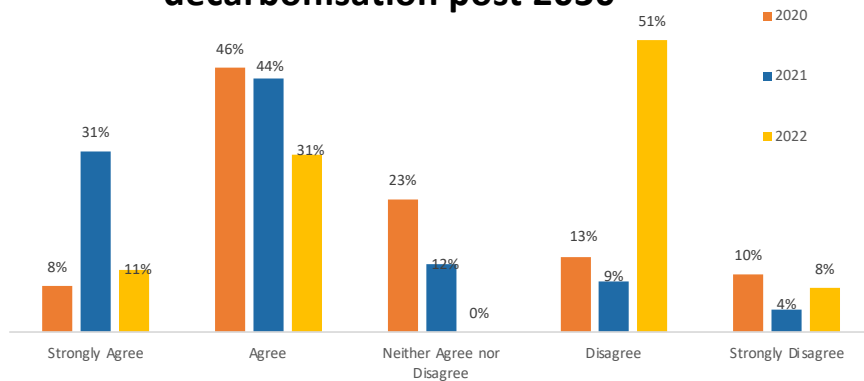
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Market Sentiment Survey (1)

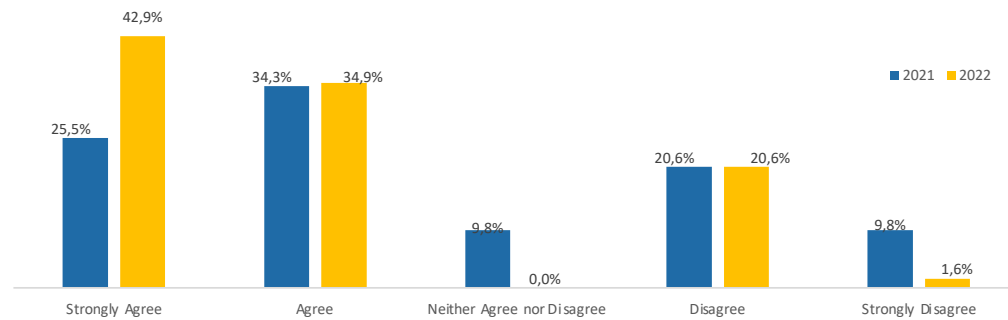
1. The EU ETS will provide a first mover advantage for the EU business community



2. The EU ETS in its present form can drive EU decarbonisation post 2030

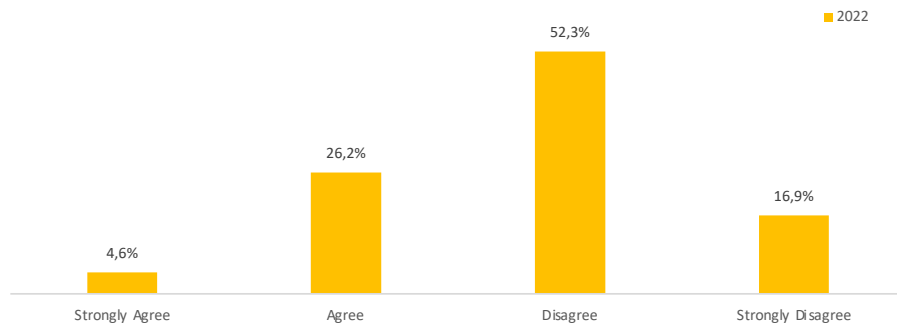


3. Significant changes are needed in the upcoming ETS review in order to make it 'fit for purpose'

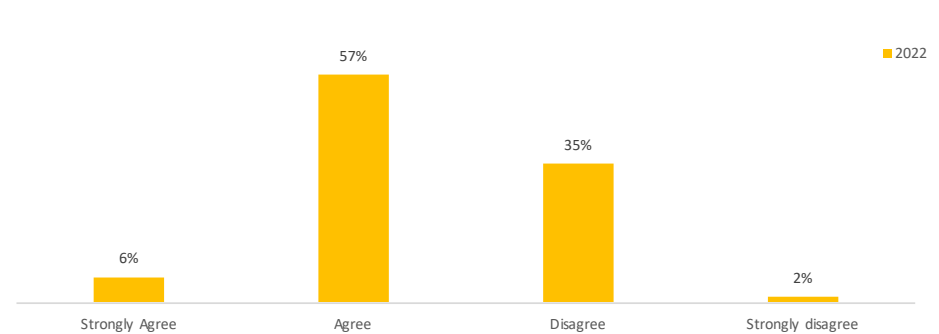


Market Sentiment Survey (2)

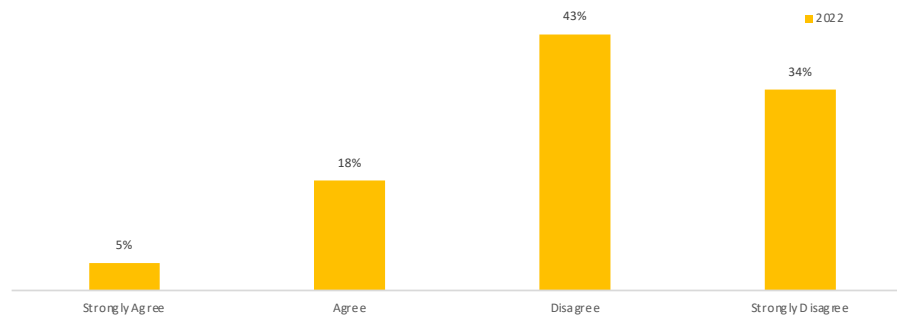
4. The current proposal for ETS review by the Commission adequately addresses concerns raised by stakeholders



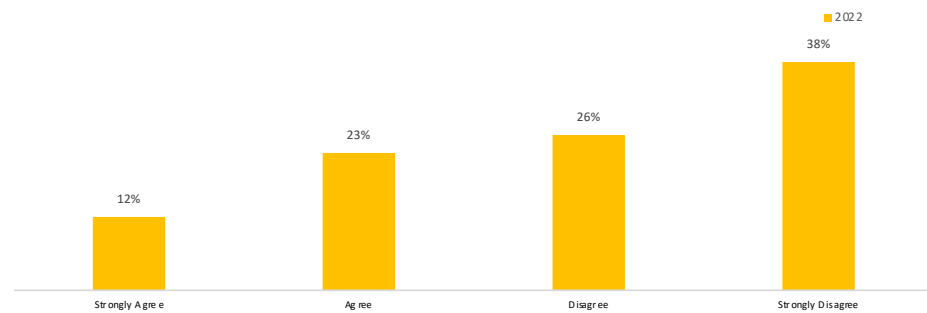
5. Does the EU ETS, as proposed in the Fit for 55 Package, will drive technological innovation?



6. The present EU ETS governance allows to respond to market dynamics



7. The combination of EU ETS and CBAM proposals for the EU will address competitiveness and carbon leakage concerns



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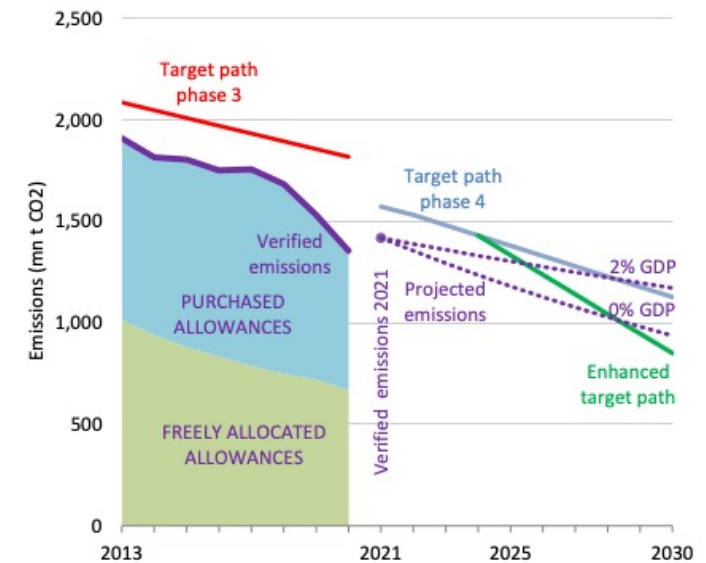
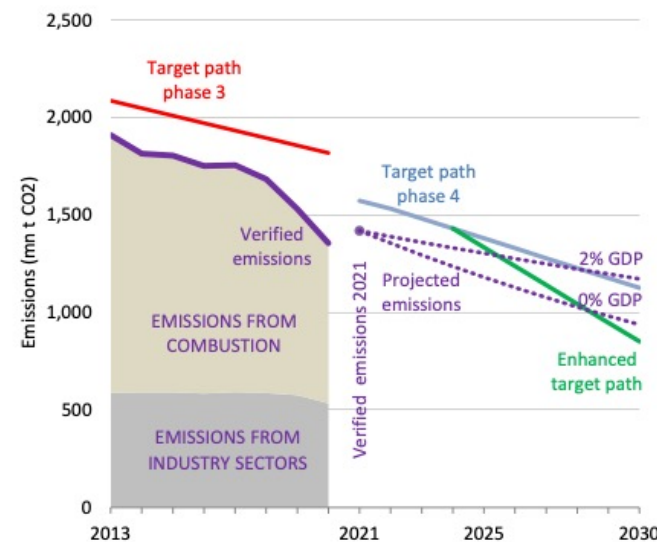
6. Environmental Delivery

Switching from the phase 3 to the phase 4 targets

Upcoming stringency in phase 4

- Projected emissions based on a corridor of GDP growth between 0 and 2 % p year might soon hit the target paths in phase 4.
- By partitioning verified emissions between combustion and industry we realize that so far, the emission reductions in EU ETS result almost only from the combustion sector.
- By partitioning the volume of verified emissions between those that were covered by free allocations and those that result from auctioning, we realize the increasing scarcity of free allocations which will affect particularly industry.

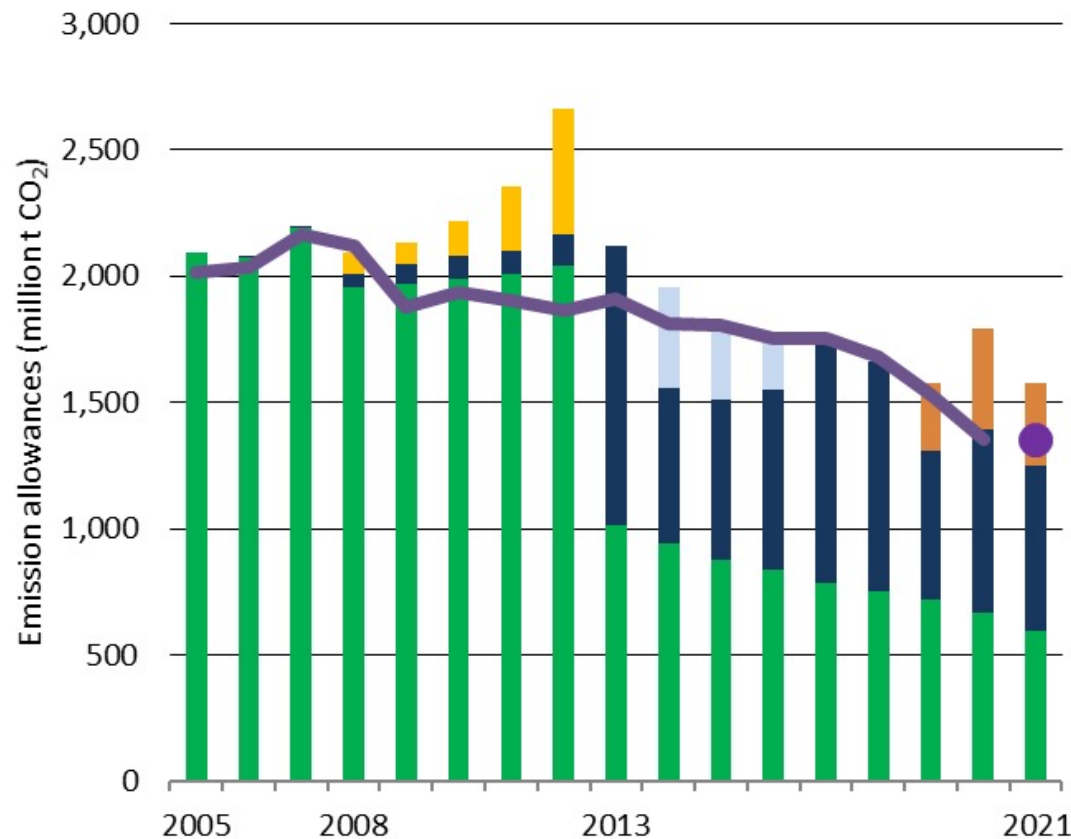
Figure 12: Projected emissions and target paths for Phase 4 in the combustions and industry sectors (a) and in the allowance allocation methods (b).



Source: Wegener Center based on EUTL (2022), EEA (2022), European Commission (2021).

Market stringency Supply versus demand of allowances

- Actions in phase 3 for responding to the gap between supply and demand of allowances comprise two procedures: the Backloading of 900 mt and the start of the Market Stability Reserve.



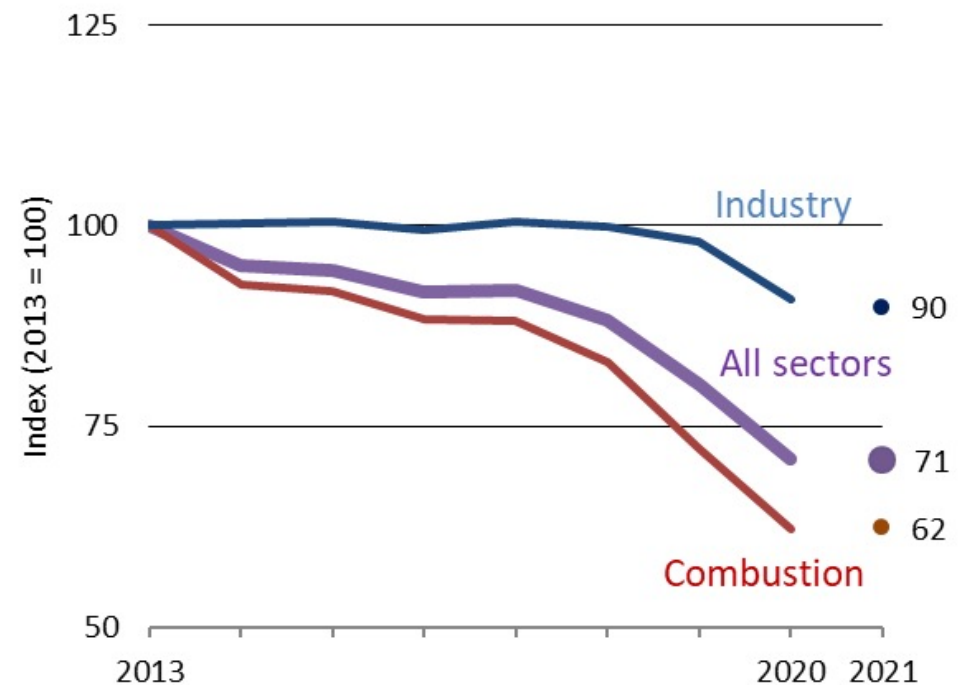
Market stringency of EU ETS Supply vs. demand of allowances

- MSR feed
- Backloading
- CERs and ERUs
- Auctioned
- Freely allocated
- Verified emissions
- Verified from 2021

Structural shifts

Combustion and industry exhibit different dynamics

- The dynamic of the emissions in phase 3 show two remarkable features.
- Emissions started to decline rapidly after 2017 because of the expansion of renewables and natural gas in the combustion sector.
- The Covid-19 dip in 2020 was almost fully compensated already in 2021.



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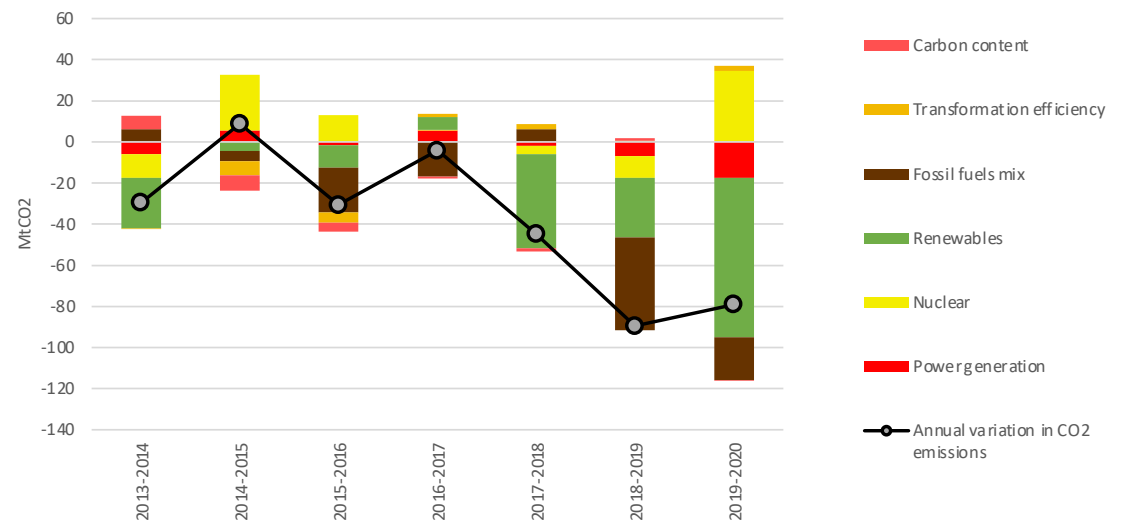
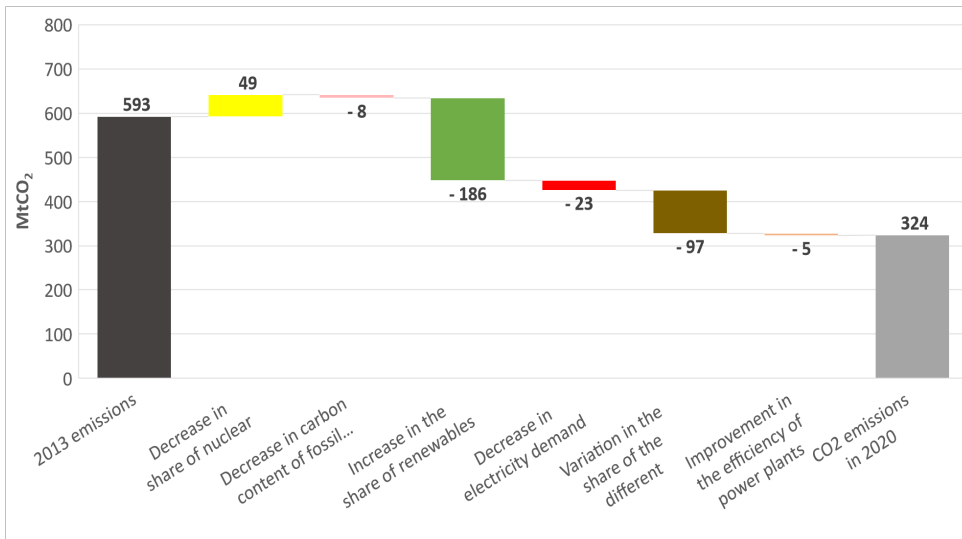
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7. Socio-economic delivery

7.1. Is the EU-ETS a driver for change?

- Decomposition (LMDI) analysis of drivers of GHG emissions in the power sector shows that the penetration of renewable, decrease in the share of nuclear production and the switch to a less carbon intensive energy mix are the main contributors to reducing GHG emissions over 2013-2020.
 - The LMDI methodology does not give the causal effect of the EU ETS on these variables, but rather evaluates the contribution of each factor.

Drivers of GHG emissions variations in the power sector in the EU (2013-2020). Ecoact elaborations on I4CE methodology. Data: Eurostat



7. Socio-economic delivery

7.2. Social impacts

In 2021, the **EU energy crisis** resulted in **record electricity prices**:

- Observers have been quick to **blame the ETS** and high carbon prices for the spike in electricity prices.
- While largely the product of a combination of demand and supply factors, studies have shown that the **ETS did contribute to price spike**:
 - Commission estimates indicate that ETS prices are responsible for **about 1/5 of current price developments**
 - Estimates by the **Spanish Central Bank attribute 20%** of 2021 price developments to ETS prices ([Banco de España](#), 2021)
 - The price increase of emitting a tonne of carbon (in the EU-ETS) equates to **10% of the increase in gas generation costs** in 2021 ([Ember](#), 2022)

7. Socio-economic delivery

7.2. Social impacts

Modernisation Fund

- Supporting decarbonisation in Central and Eastern Member States.
- **2% of the total allowances 2021–2030** i.e. estimated at **310 million allowances**.
- Operational in January 2021.
 - In the [first biannual disbursement](#) cycle, **6 multiannual schemes** were confirmed in **Hungary, Poland and Czechia** for a total volume of **EUR 304 million**.
 - The schemes include investments in **renewable energy, energy efficiency, smart grids, and developing power grids and energy communities**.

*244 M allowances if AMB2c: 4,22% LRF from 2024 with 119 million rebase.

Source: [COM\(2021\) 551 final](#). Pp 563.

Source: [DG CLIMA website](#), [COM\(2021\) 962 final](#)

7. Socio-economic delivery

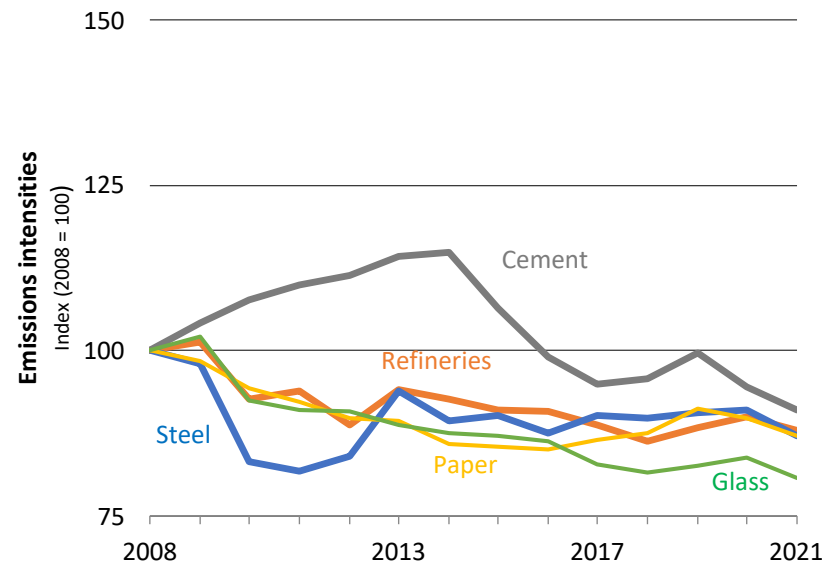
7.2. Social impacts

- **Just Transition challenges** measuring social impact:
 1. **Transport poverty**
 2. **Access to infrastructure**
 3. **Regional income inequality**
 4. **Level of EU/National/Regional Technical Assistance (TA) strategies**
 5. **Technical innovation and funding** in hard-to-abate sectors
 6. **Employment** (notably re-skilling) strategies
 7. **Investments**

7. Socio-economic delivery

7.3. Industrial decarbonization

Figure: Emissions intensities in selected industry sectors.



The sharp decline of emissions in steel production reflects the impact of investments into electric furnaces. Cement clinker decreased its emissions intensities by almost 20%.

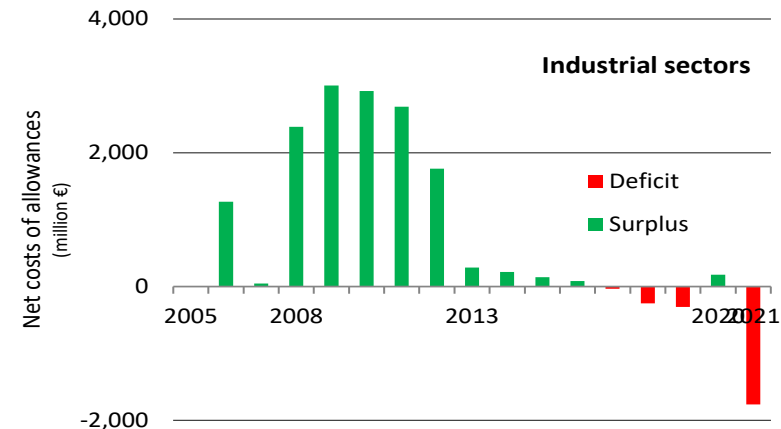
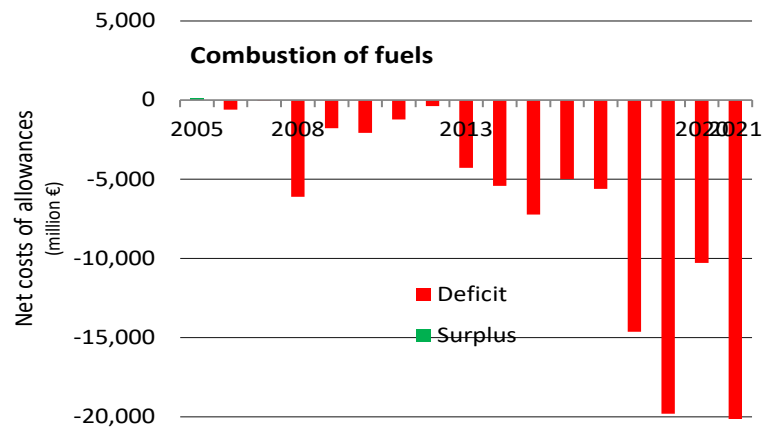
Source: Wegener Center based on EUROSTAT STS and PRODCOM data.

7. Socio-economic delivery

7.3. Industrial decarbonization

- Balance of allowances

Figure: Net cost of allowances



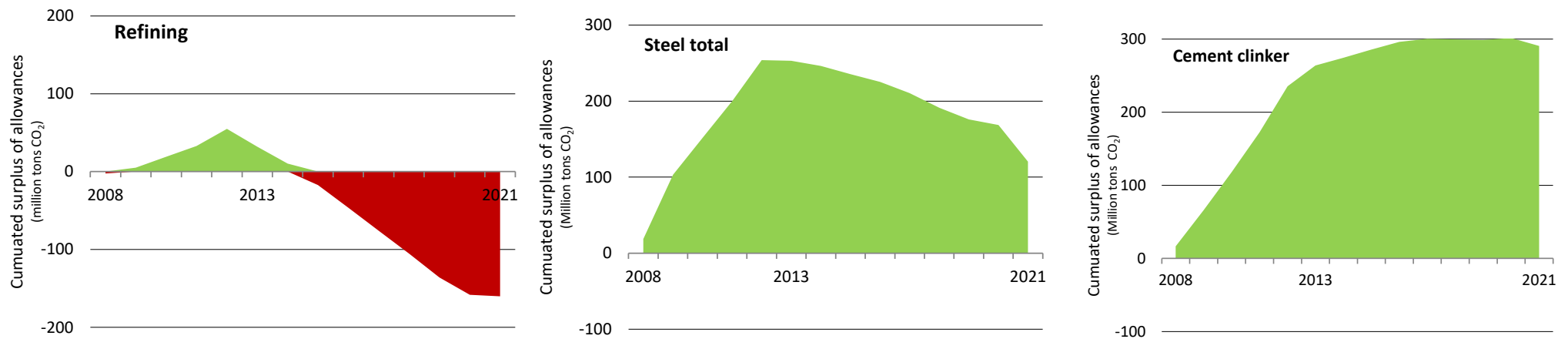
Source: Wegener Center based on EUROSTAT STS and PRODCOM data.

7. Socio-economic delivery

7.3. Industrial decarbonization

- Balance of allowances

Figure: Cumulative balance of allowances.



Source: Wegener Center based on EUROSTAT STS and PRODCOM data.

7. Socio-economic delivery

7.4. Innovation

Funding from the EU Innovation Fund Results of the first call for large-scale projects

- A major step for incentivizing and enabling these transitions was the start of the Innovation Fund with 450 million allowances
- Which corresponds to a monetized value beyond EUR 30 billion, at current EUA prices.

The projects funded with EUR 1 billion under the first call for large-scale projects :

- provide orientation for driving innovation, such as steel from renewable hydrogen, and capturing, storing, and reusing CO₂.
- These projects demonstrate value chains with (CCUS) are essential for transforming the hard-to-abate (HTA) industries.
- These projects would not become viable just from a higher EUA price because of the technological and financial risks involved.

7. Socio-economic delivery

7.4. Innovation

Emerging policy strategies for targeted innovations

New instruments needed for the HTA industries

- **Switching the wording from decarbonization to carbon management**
Carbon recycling may become feasible for HTA industries
- **Encouraging integrated solutions along the whole value chain of a product**
Steel and cement could be reduced in buildings up to 70 percent without compromising mechanical and thermal functionalities
- **Integrated instead of fragmented policy strategies**
A hydrogen strategy, e.g., needs a vision of where hydrogen is essential and from where it could be supplied
- **New and big amounts of financing is needed for the radical transitions of the HTA industries**
Instruments as the EU Innovation Fund might become important drivers of targeted innovations

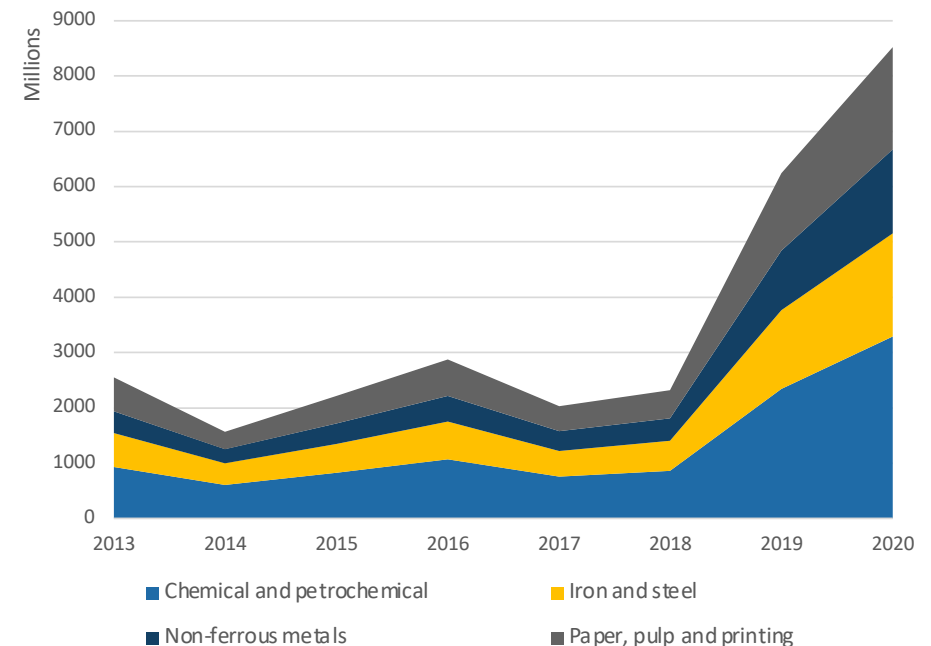
7. Socio-economic delivery

7.5. Carbon Leakage

Indirect Costs

- Indirect costs of the EU ETS may lead energy-intensive industries to relocate their means of production outside the EU or increase imports, causing carbon leakage.
 - The Commission has approved 16 schemes in 15 Member States. Czechia and Italy have started compensating in 2021.
 - Indirect costs were in the range of € 2-3 billion from 2013 to 2018, and almost quadrupled to over € 8 billion in 2020, due to higher carbon prices
- In the ferro-alloys and silicon industry, indirect costs after compensation are considerably higher than direct costs. This is mainly because the compensation provided by Member States covers a smaller share of indirect costs than free allocation covers direct costs.
 - Despite indirect cost compensation schemes, indirect costs could rise to unmanageable levels by the end of Phase 4, leading to carbon leakage.

High-end estimation of indirect costs for four sectors exposed to carbon leakage due to indirect emission costs (million euros). Ecoact based on Eurostat data.



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8. Market functioning

8.1 Market functioning trackers

Strong market functioning in 2021

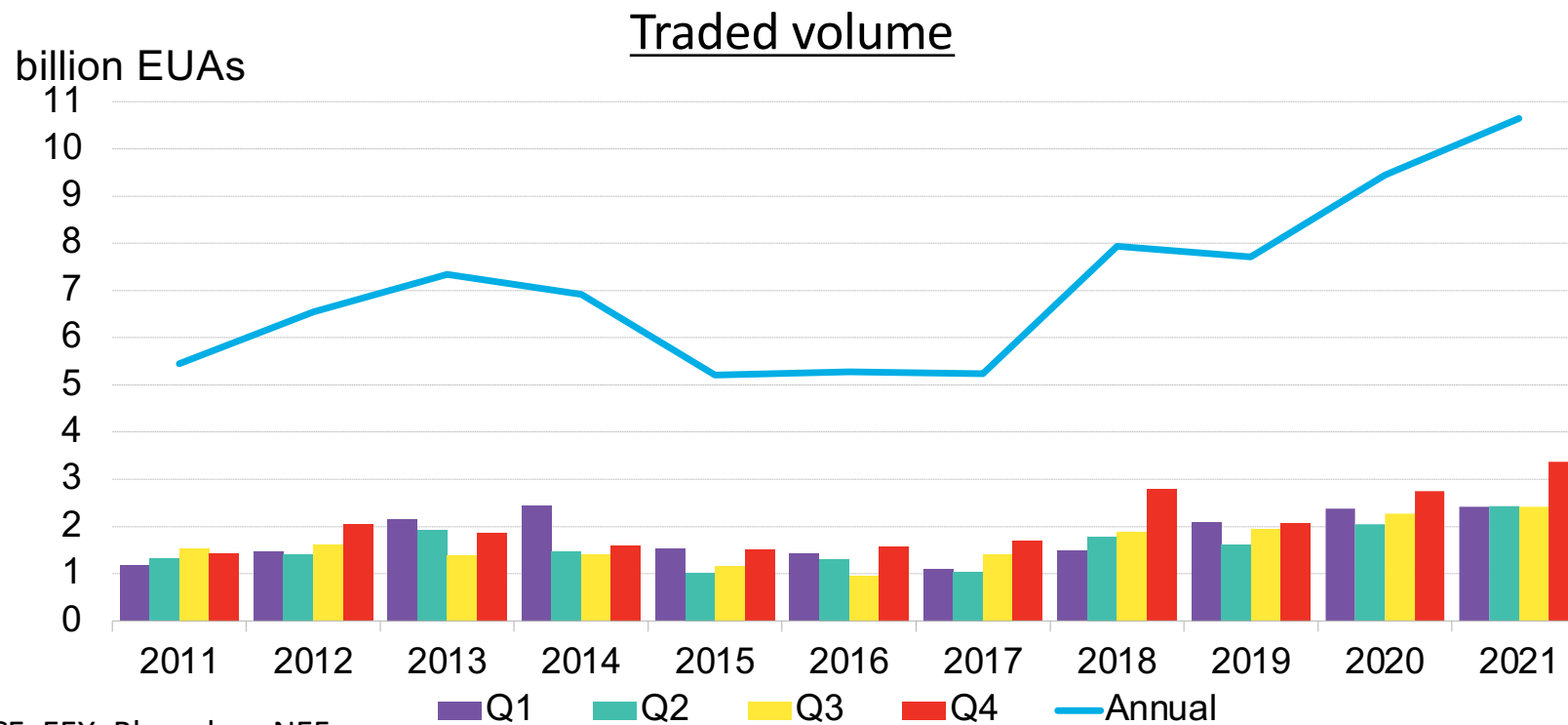
Indicator	2019/2020	2020/2021
Volume	Green	Green
Open interest	Yellow	Green
Auction participation	Yellow	Yellow
Auction coverage	Red	Red
Auction versus spot spread	Red	Red
Cost of carry	Yellow	Yellow
Ask-bid spread	Yellow	Red
Volatility	Yellow	Yellow

Source: BloombergNEF. Note: *Green* indicates improvement, *red* worsening, *amber* stable

8. Market functioning

8.1 Market functioning trackers

Record traded volumes rise 13% to surpass 10 billion



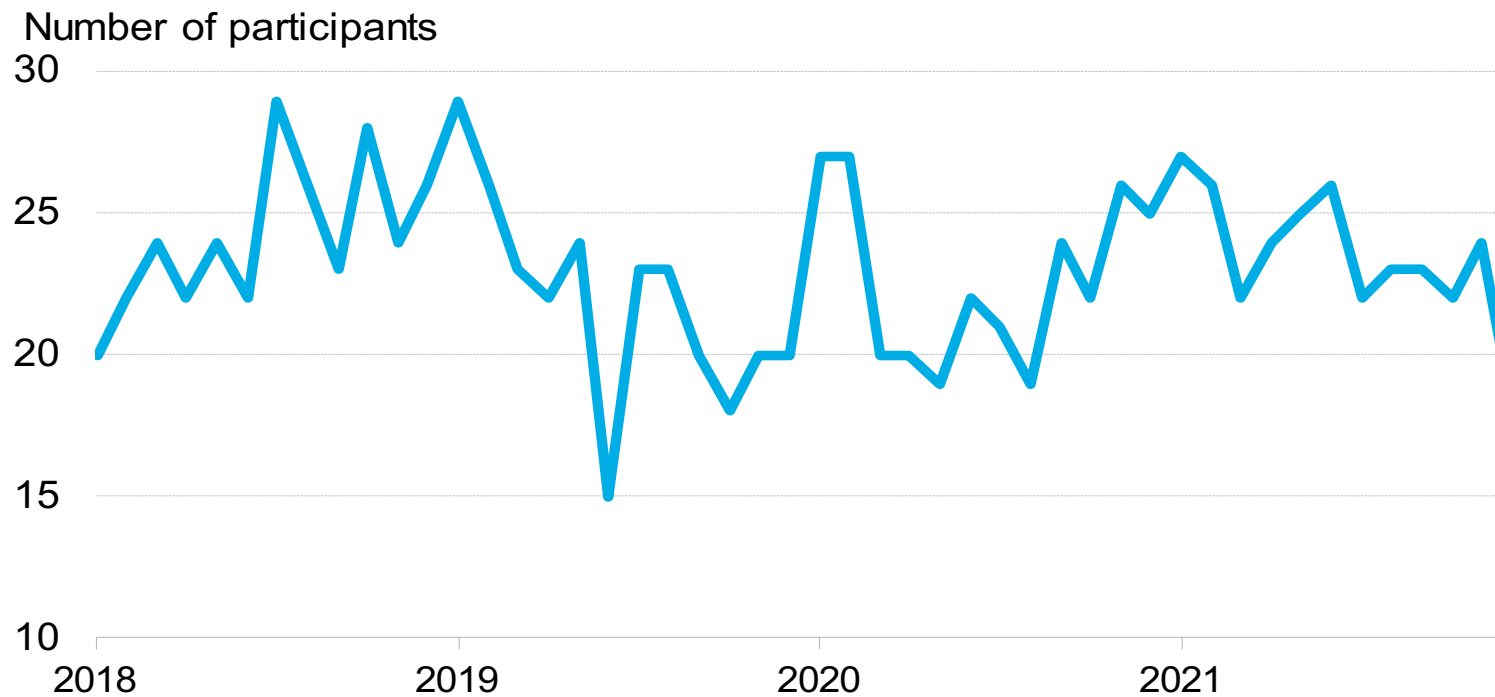
Source: ICE, EEX, BloombergNEF

8. Market functioning

8.1 Market functioning trackers

Participation remains strong in primary supply

Monthly average auction participation



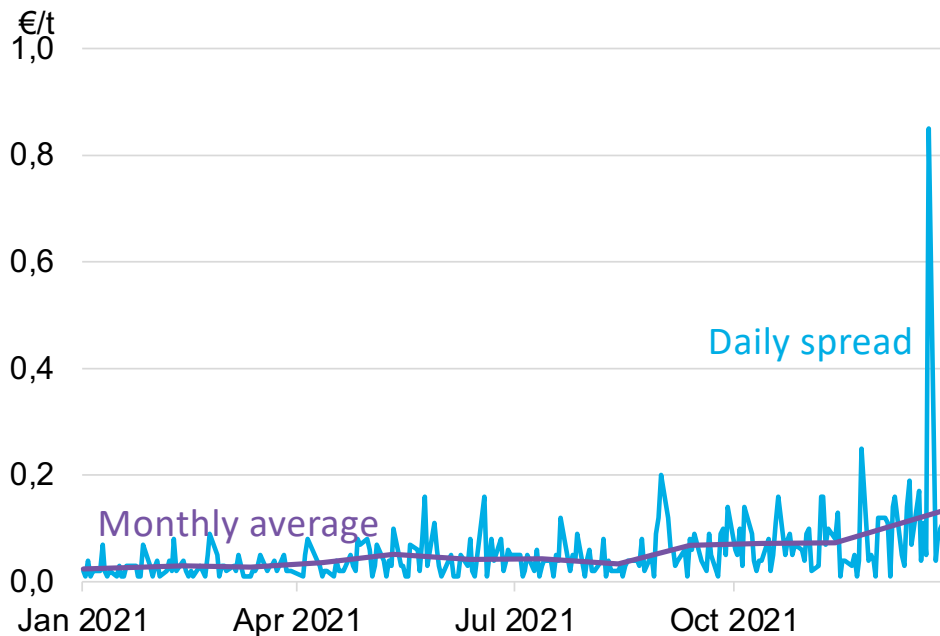
Source: EEX, BloombergNEF

8. Market functioning

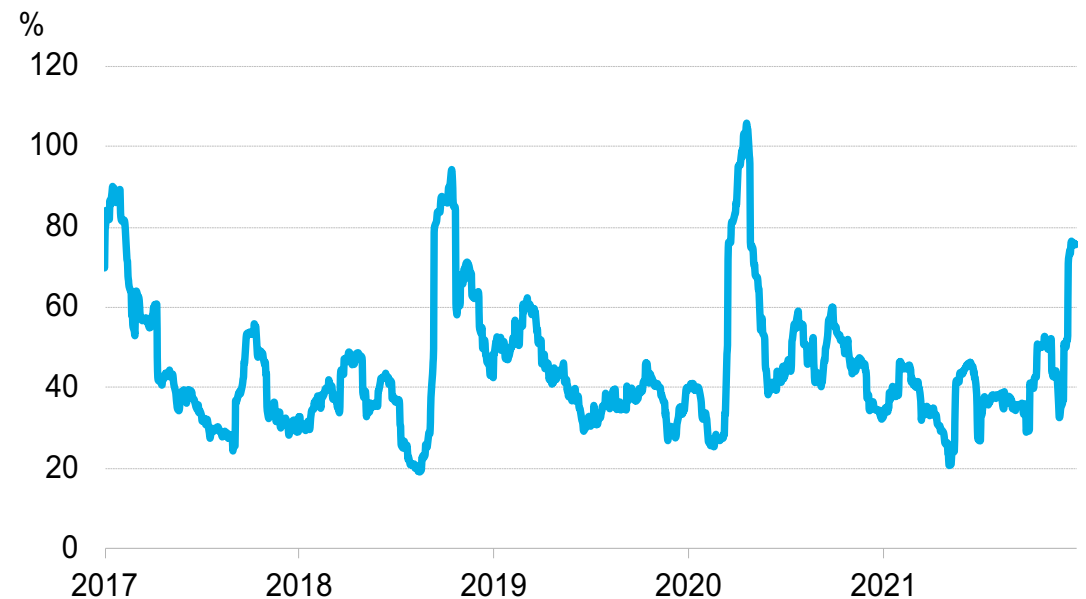
8.1 Market functioning trackers

Widening bid-ask spread signals higher volatility

Ask-bid spread on ICE



Volatility



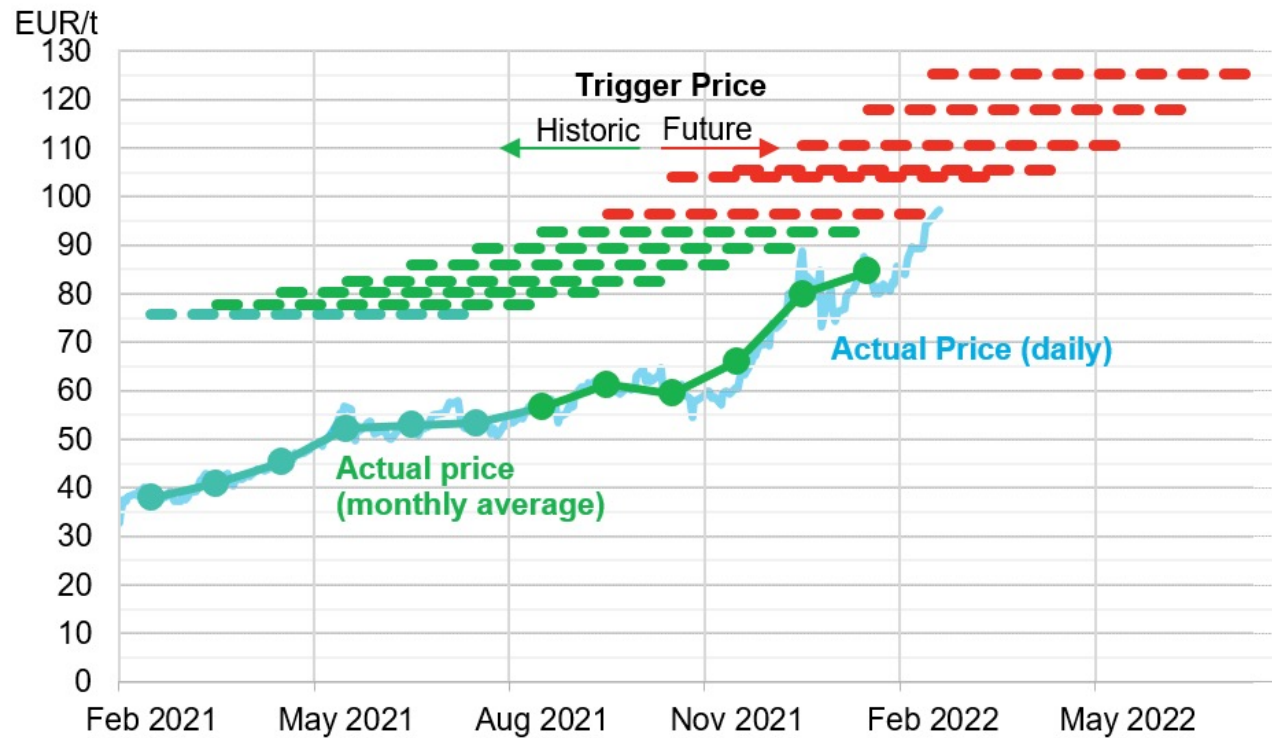
Source: ICE, BloombergNEF

8. Market functioning

8.1 Market functioning trackers

No cost containment intervention despite price rise

Article 29a CCM trigger prices for each six-month period



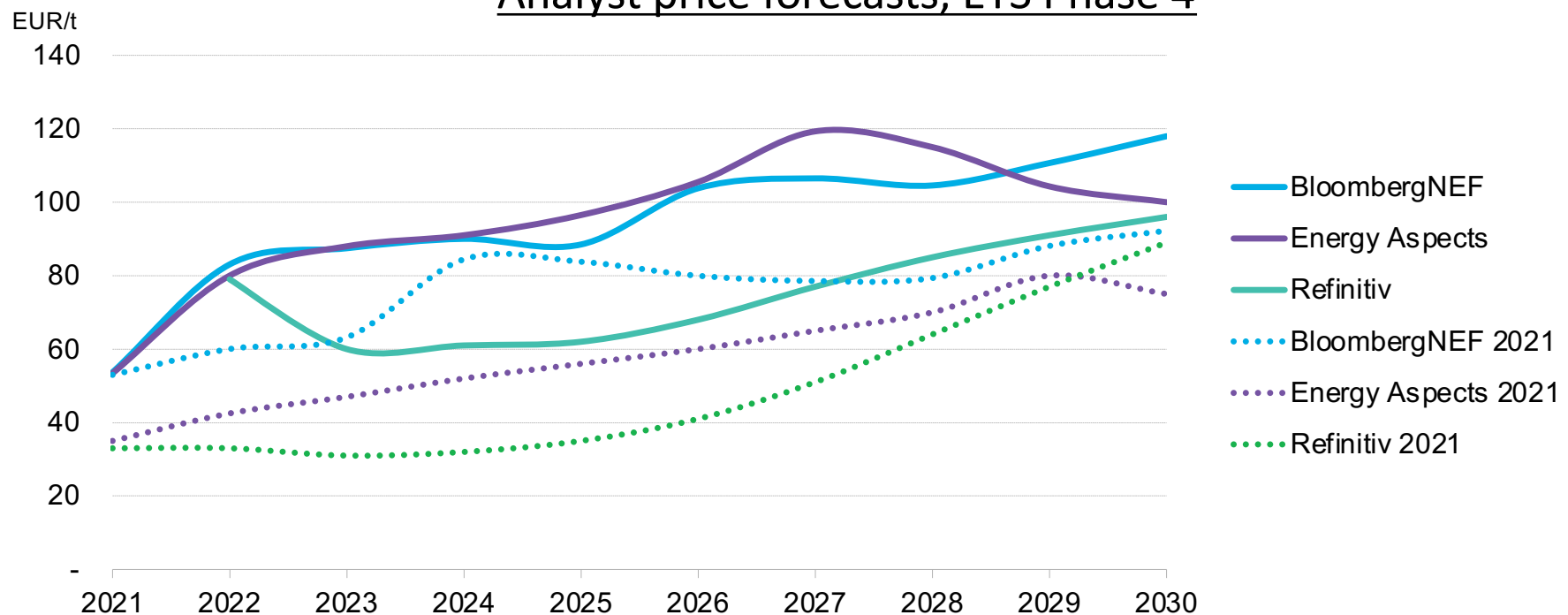
Source: BloombergNEF.

8. Market functioning

8.2 Price forecasts

Upward revision in price forecasts

Analyst price forecasts, ETS Phase 4

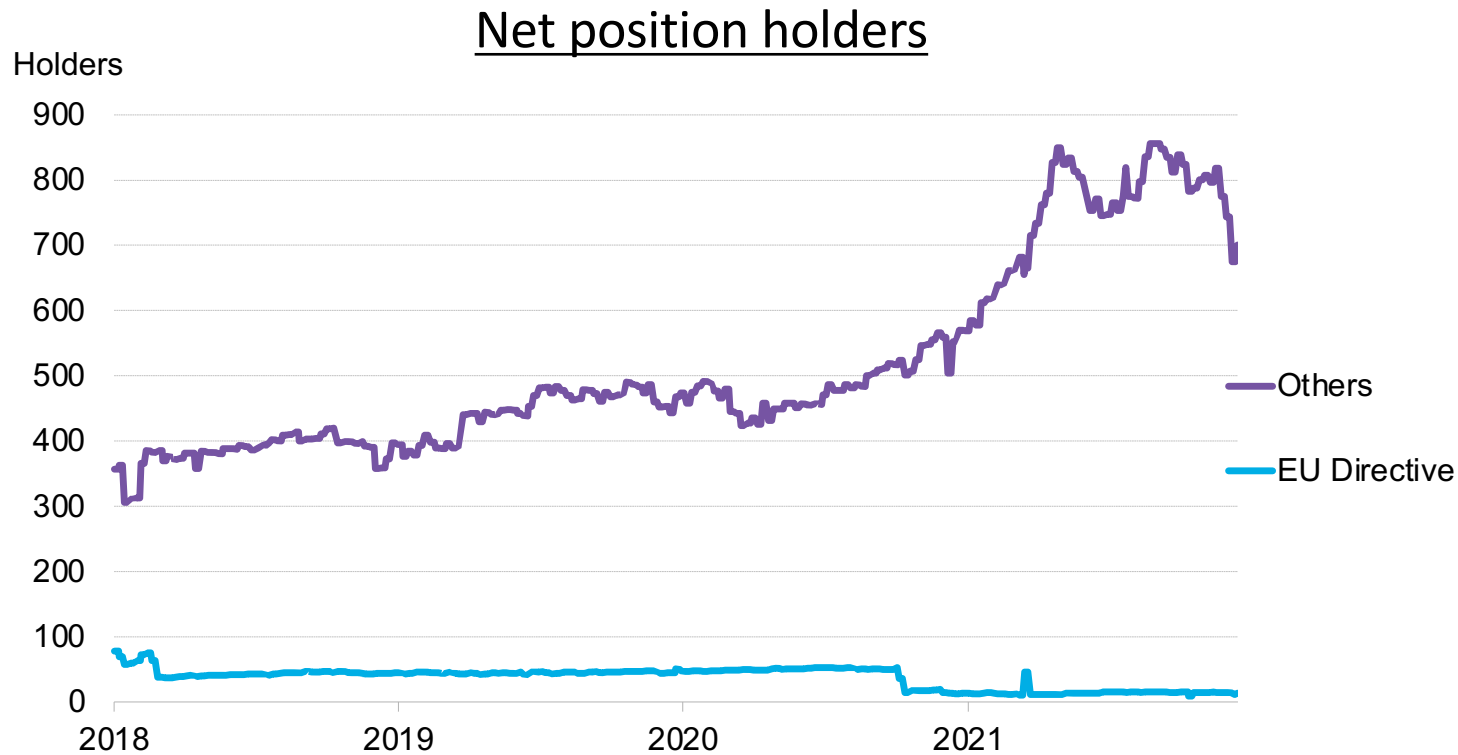


Source: BloombergNEF, Energy Aspects, Refinitiv. Note: Prices are in real 2021 € per metric ton.

8. Market functioning

8.3 Market participation

Record participation of entities not regulated under ETS Directive



Source: ICE, EEX, BloombergNEF. Note: Data is from Commitment of Traders (CoT) database.

9. Take aways/conclusions

- The European Climate Law is providing a new reality to become net zero by 2050.
- However, the EU ETS debate may not be as visible as in the past as CBAM have become the focus of attention.
- 2021 as a period of completion of secondary legislation from the EU ETS Directive in 2018, but also a proposal to revise the current framework.
- While some elements are still at stake, Phase 4 of the EU ETS is the first one without UK installations.
- Need to further envisage the role of the EU ETS and international carbon markets under Article 6 of the Paris Agreement.
- The annual market sentiment survey shows some questioning of the role of the EU ETS. Still, stakeholders consider the EU ETS as the best of the instruments to drive decarbonisation.
- Estimates indicate a 9.1% increase of total emissions in 2021 vs 2020. Still, the dip in emissions caused by lower economic activity in 2020 had not yet been overcome in 2021.
- Discussion influenced by the energy crisis on the carbon market and the increased high volatility of carbon prices.
- This as the time to start exploring the role of the EU ETS post 2030