

• MSR Review: Expert Workshop

24th March 2021

Introduction

Vivid Economics has been contracted to provide a study of the EU ETS Market Stability Reserve (MSR) as part of the review of the MSR. This workshop will present ideas considered in the Vivid study, as well as opinions by market experts. **The presentation does not present the opinions of the Commission nor any information about the MSR review or the wider ETS review coming from the Commission.**

9 – 9:15 Welcome (DG CLIMA & Vivid Economics)

9:15 – 9:30 Summary of the MSR's functioning to date

9:30-9:45 Key market and policy uncertainties and MSR design

9:45 – 10:00 Q&A

10 – 10:30 Options and considerations for MSR design

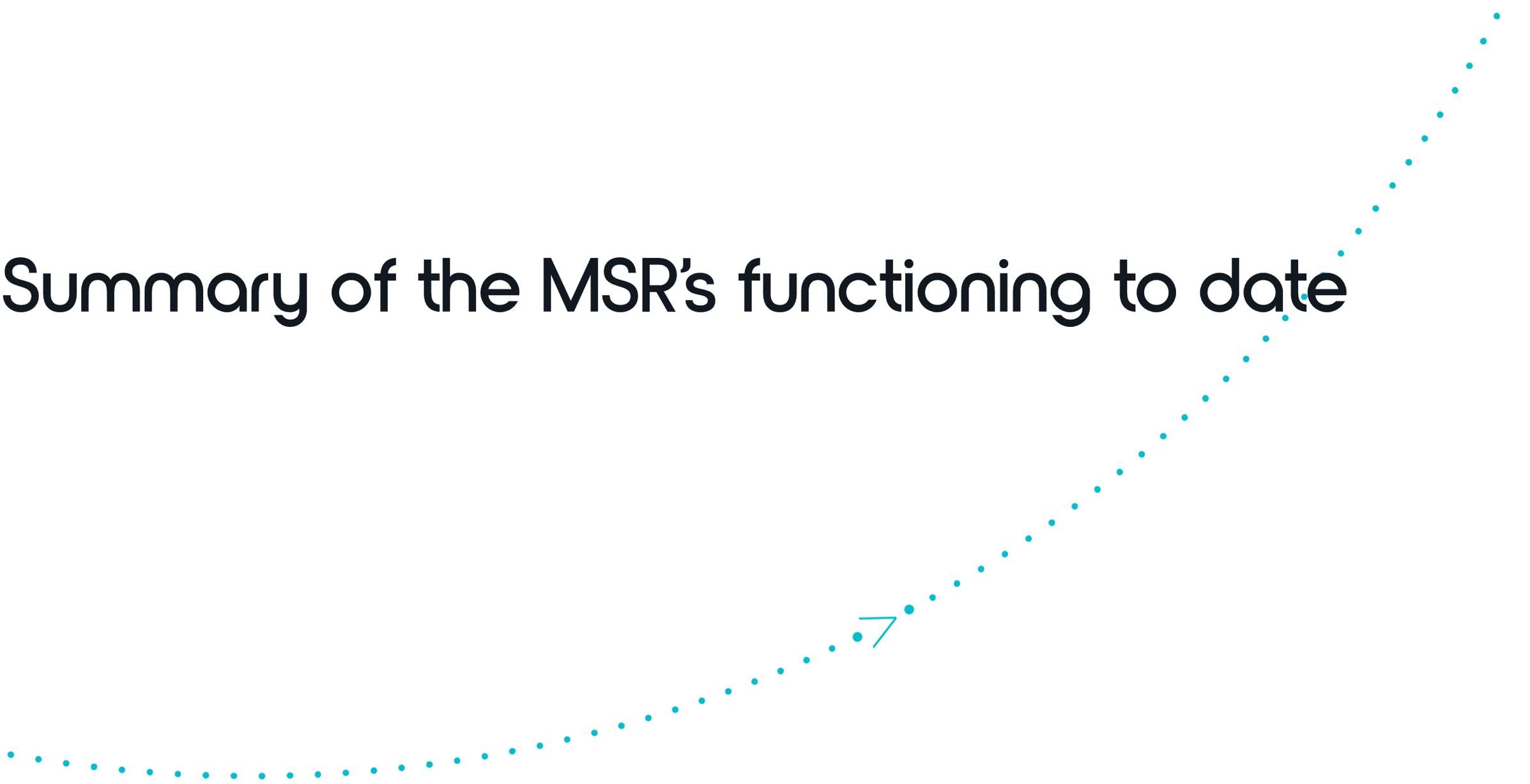
10:30 – 10:45 Q&A

10:45 – 11 Break

11 – 12 Panel discussion: Opinions by market experts

12 – 12:50 Q&A

12:50 – 13:00 Closing remarks



Summary of the MSR's functioning to date

Summary of the MSR's functioning to date



Is the MSR tackling historical supply-demand imbalances?



Is the TNAC definition reflective of market demand?



Has the MSR improved resilience of the EU ETS?



What are the key risks going forward?



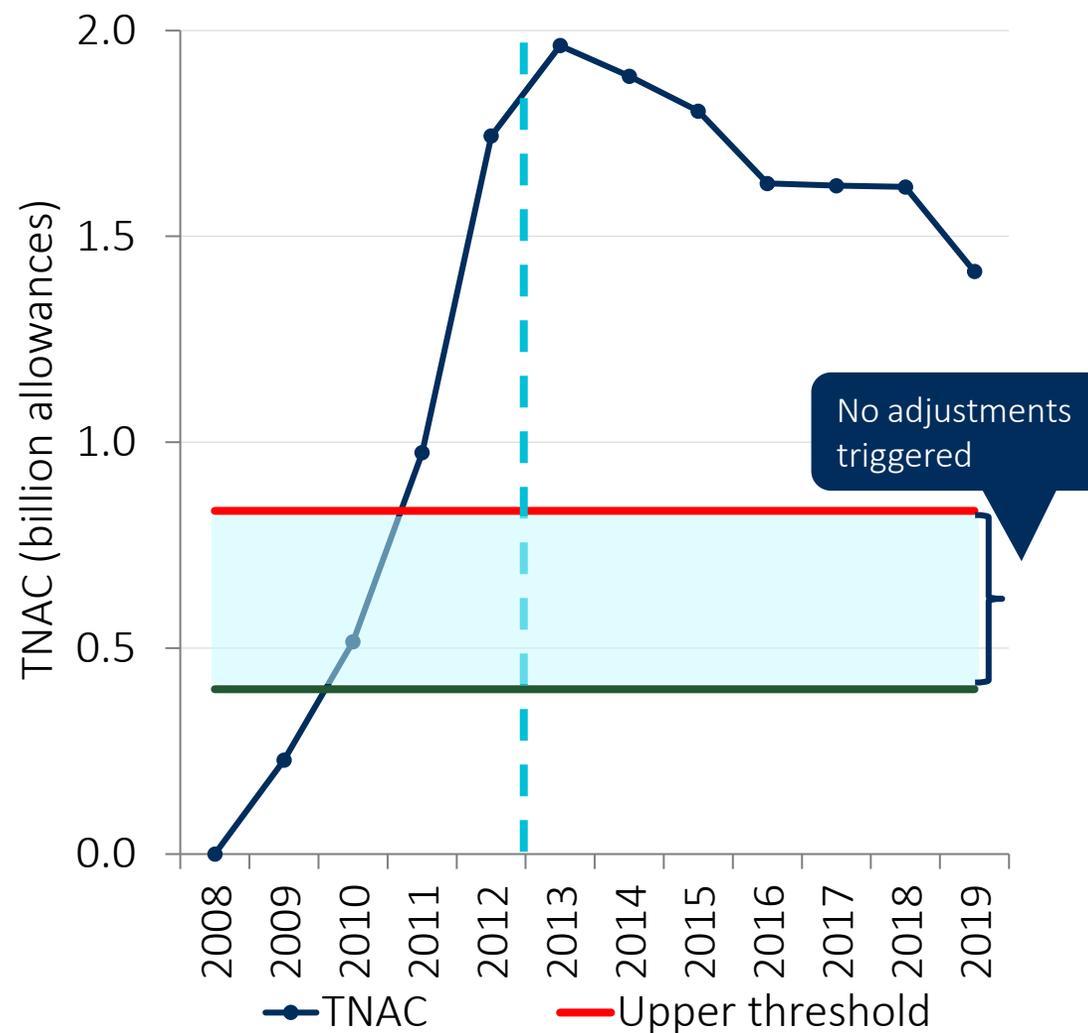
Katherine Monahan
Engagement Manager
Vivid Economics

The TNAC has historically been persistently above the MSR's upper threshold



The TNAC level peaked in 2013

- The TNAC increased over phase 2 and the first year of phase 3:
 - ◇ Economic downturn reduced demand for allowances
 - ◇ Emissions were reduced more quickly than anticipated due to a set of complementary policies such as energy efficiency measures
 - ◇ Exacerbated by a cumulative volume of 1.47 billion international credits (Phase 2)
- Weakened the perception of allowance scarcity and market confidence resulting in EUA prices falling continually to below 5 EUR in 2013.

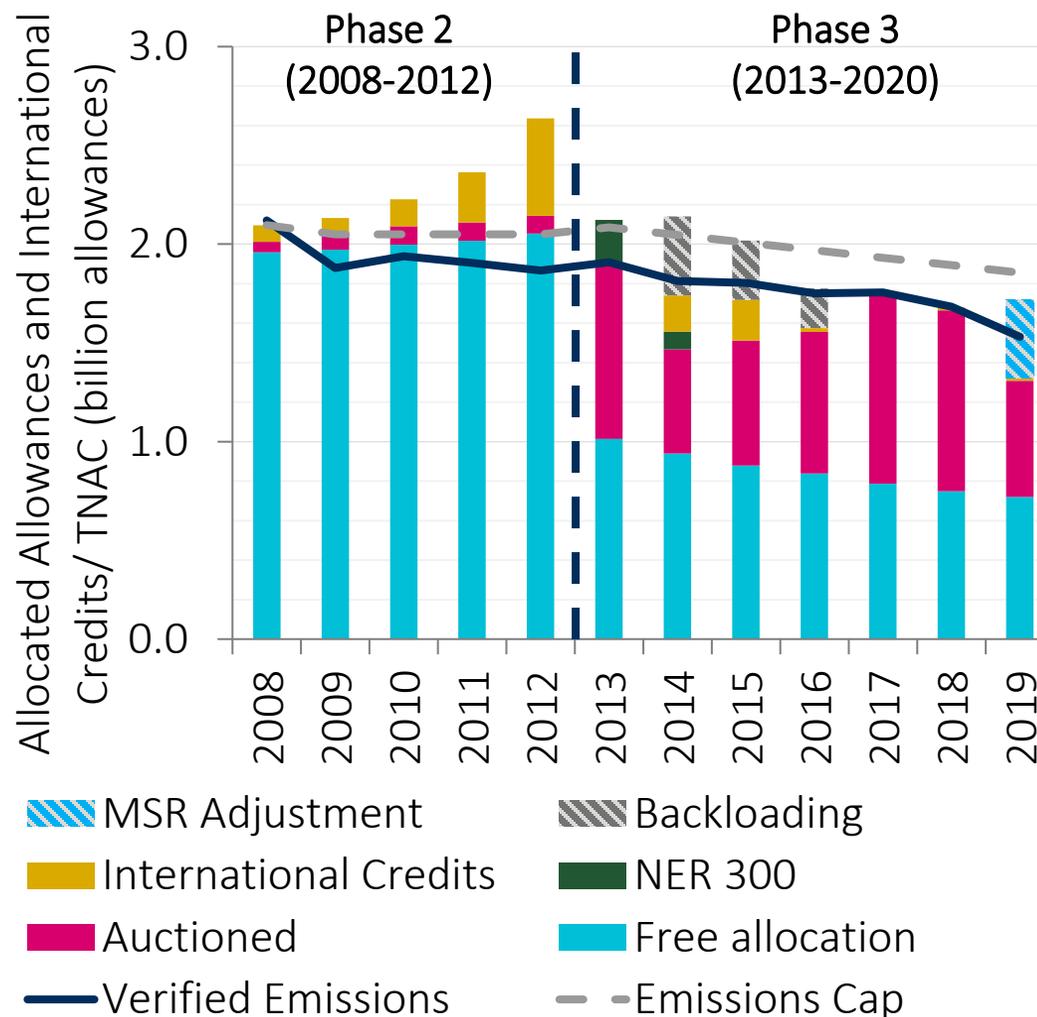


The MSR is delivering on its objectives of reducing the historical surplus of allowances in the EU ETS market



Market reforms, including the MSR, have started to reduce the allowance surplus

- Reforms began in 2014 with backloading, and announcement of international credit restrictions.
- In 2015 the MSR was introduced and later filled with backloaded allowances.
- Invalidation mechanism (2018) limits the validity of MSR intakes in excess of previous year's auctioning volumes permanent as of 2023.
- First MSR adjustments began in 2019, intaking 397 million allowances, currently intaking nearly 300 million allowances between Sept 2020 to Aug 2021 (with Brexit/cap adjustment notice).
- Overall, these measures have been successful in restricting the further growth in the surplus; 2019's surplus is 29% lower than its peak in 2013.

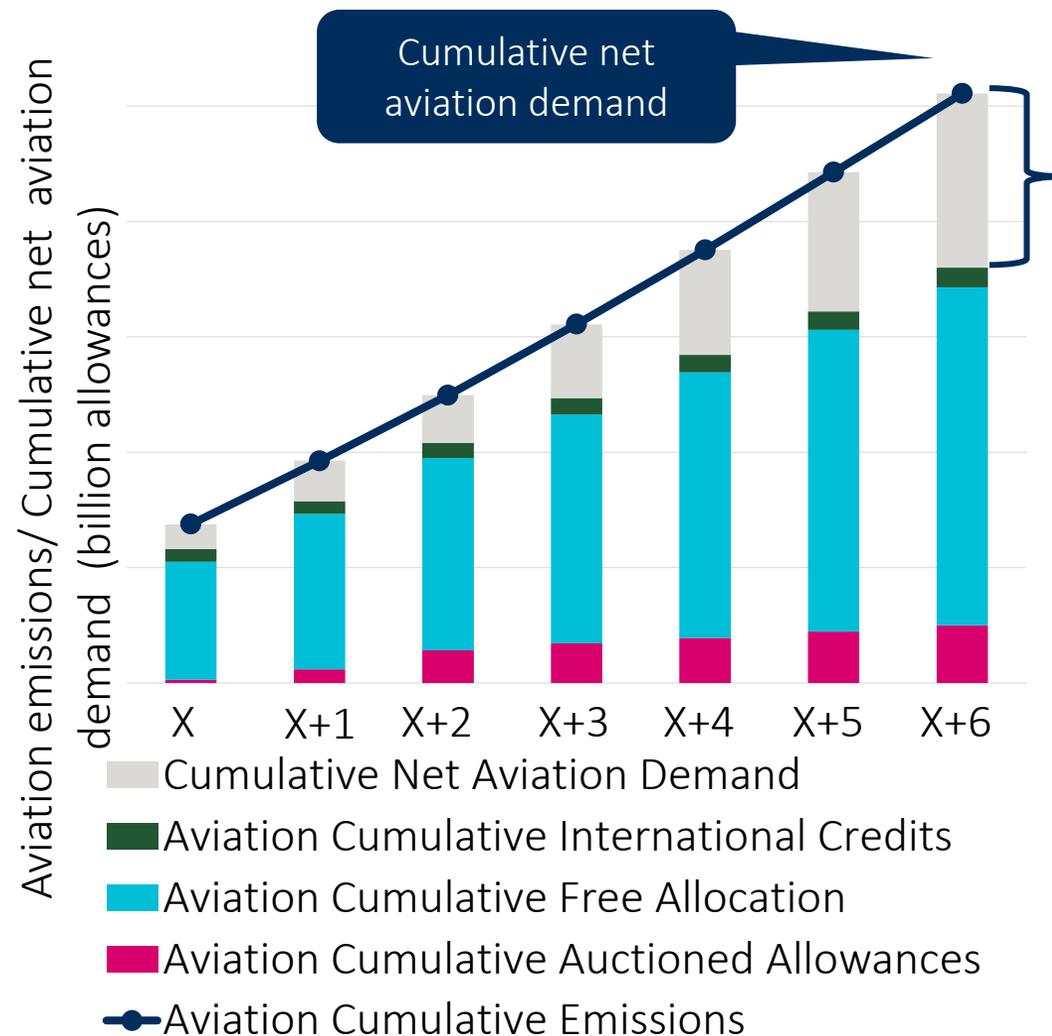


To date, the TNAC has been a reasonable estimate of the allowance surplus but there are some challenges around its calculation going forward



Unaccounted sources of demand are not reflected in the TNAC definition

- The current TNAC definition excludes certain sources of demand, including aviation operators, linked systems, and other sources of restrictions in supply (e.g., EUAs under Effort Sharing Reg.)
- This could result in an overestimation of the number of allowances available to the market
- The TNAC definition does not explicitly recognise the reasons for holding allowances, including intertemporal compliance cost optimisation, where this becomes more important with increased EUA scarcity

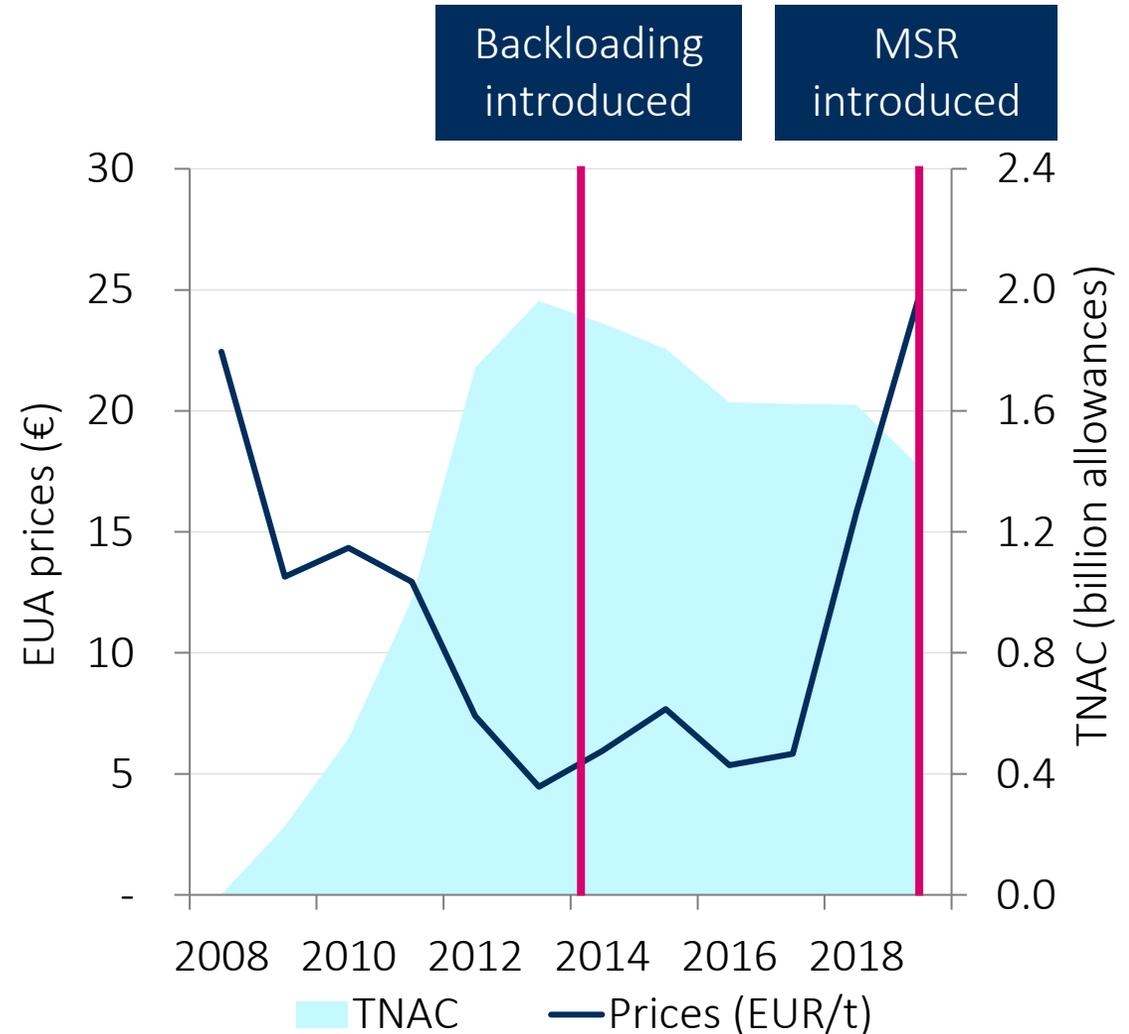


The MSR is intended to make the EU ETS more resilient by introducing non-discretionary adjustments to auctioning volumes in the event of market shocks



The MSR's response to shocks is gradual and delayed but cushions price impacts

- The COVID-19 induced demand shock represents the MSR's first test to future stability; Prices have demonstrated resilience, but why...
- At 12 or 24% intake rates, it will take several years for the MSR to absorb most of the impacts of a shock.
- However, the MSR's predictability cushions short-term price impacts immediately due to longer-term planning horizons; while broader market confidence plays a key role.



Overall performance and risks going forward



Experts agree that the MSR has so far performed its role, but some risks remain

- Overall, the MSR has worked well until this point, where the TNAC has been a successful indicator of the remaining historical surplus and therefore allowance scarcity.
 - ◇ Graichen et al. (2019); Pahle and Quemin (2020); Bruninx et al. (2019a) and Beck and Kruse-Andersen (2020); Marcu et al. (2020): the first objective of the MSR to reduce past supply-demand imbalances is deemed attainable.
- Scenario-specific risks have been identified in the literature [e.g., Rosendahl 2019; Bruninx et al. (2019), Gerlagh et al. (2020), Schmidt (2020) and Perino et al. (2020, 2021)]
 - ◇ Anticipated policy change: Forward-looking participants can reduce emissions today in order to smooth future compliance costs. This results in a higher TNAC and higher MSR intakes.
 - ◇ The MSR interacts with other climate and energy policies in complex ways where anticipated actions can lead to less banking and therefore less invalidations (“the new green paradox”).

Key market and policy uncertainties and • MSR design



Key market and policy uncertainties and MSR design



What impacts could changes to other aspects of the ETS or related policies have?



What impact could changes in market behaviour have?



Karishma Gulrajani
Senior Economist
Vivid Economics

The design of the MSR should be assessed in the context of a changing market and policy environment

- The MSR was designed in part to remove the historical surplus from the market. So far, its intake mechanism performed well in meeting this objective.
- Once the historical surplus has been lowered, the MSR could focus on enhancing market resilience.
- The ability of the MSR to support a resilient market will depend on the broader ETS design, and market behaviour.
- There are significant uncertainties over the wider policy environment.



Higher EU ETS ambition



Scope expansion of the EU ETS



Carbon Border Adjustment



Linking with other ETS



Overall hedging demand is uncertain, but expected to decline



Increased interest by financial players

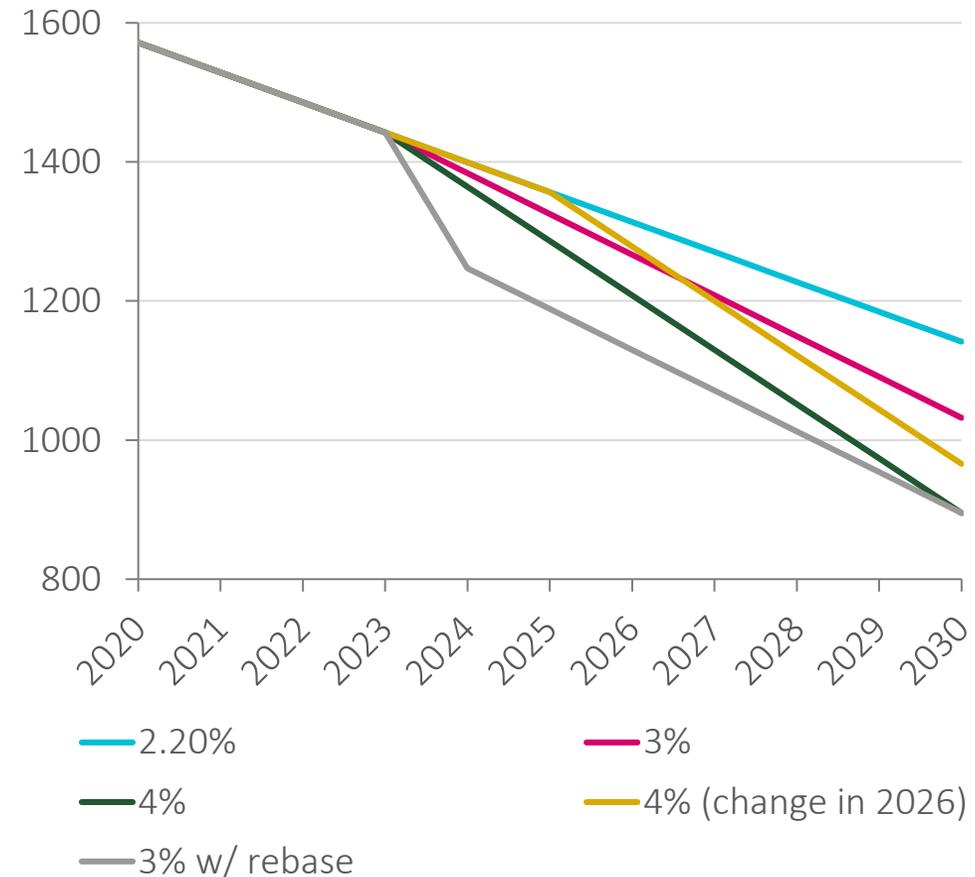
The overall ambition of the EU ETS has a significant impact on MSR functioning



Higher EU ETS ambition

- The EU ETS ambition is primarily determined by the LRF (and any rebasing of the cap)
- Cap trajectory over Phase 4 is yet to be decided
- Even if there is a fixed 2030 target, there is still uncertainty over the trajectory of the cap over Phase 4
- If the cap is too tight, MSR intakes risk tightening the market balance excessively. If the cap is too loose, the MSR might leave behind a high level of market surplus.
- Tightness of the cap will also affect market sentiment, abatement investments and hedging demand
- Note: The TNAC is also a function of abatement and emissions decisions, in addition to the cap

Stylised EU ETS cap trajectories



Changes to wider policy environment will require further adjustments to the MSR



Scope expansion of the EU ETS

- New market participants would face different abatement costs and create additional hedging demand
- Increased auction volumes would also affect the pace of MSR invalidations
- *How to adjust thresholds given the size and composition of the market? How to adjust the invalidation mechanism to reduce policy complexity?*



Carbon Border Adjustment Mechanism

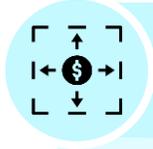
- A (partial) phase out of free allocations would increase auction volumes while hedging demand could rise
- *How to adjust thresholds amidst uncertain hedging demand? How to adjust the invalidation mechanism to reduce policy complexity?*



Linking with other ETS

- Sources of demand and supply diverge from what is included within the current definition of the TNAC
- *Should the TNAC include supply and demand from linked markets?*

Focus on market behaviour



Hedging demand expected to decline

- **Absolute hedging is expected to reduce over time** as emissions decrease
- **Utility hedging on decline:** with prices remain high and the coal phase out takes place, hedging demand is likely to fall as utilities increase abatement and reduces carbon exposure
- **Mixed views on industrial hedging:** despite recent increases in hedging demand from the largest and most exposed firms, some expected very limited hedging from other participants. Others saw potential for increased hedging, given advisory services from banks, traders, or other financial institutions.
- **Phasing out of free allocations or any expansion of scope** would likely increase hedging demand
- **At the same time other demand sources, such as long-term investors will become increasingly important**

Implications for the MSR

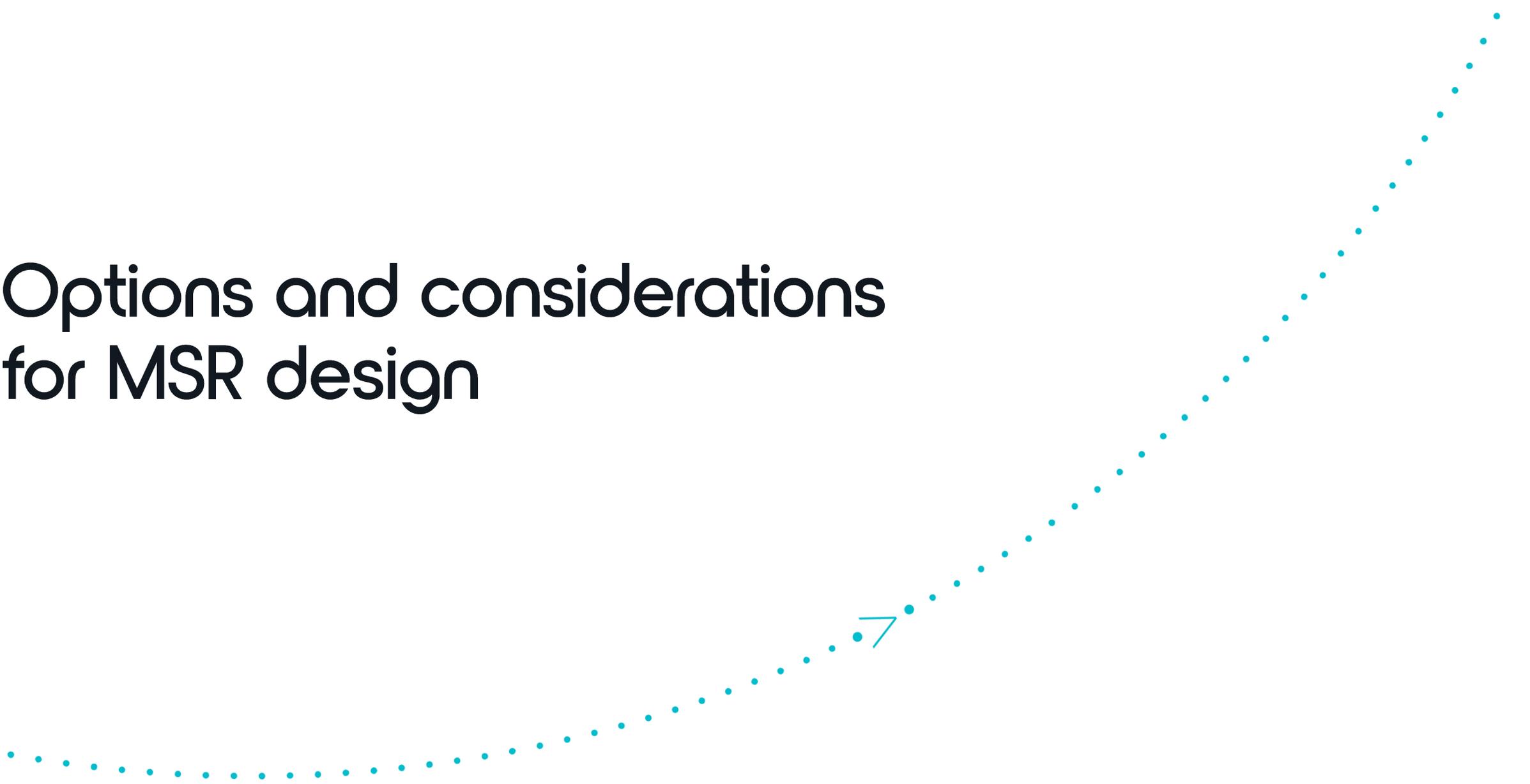
- Thresholds should give the sufficient 'space' for emitters to hedge future emissions
- But policymakers need to navigate significant uncertainty over future hedging demand

2030 Industrial hedging demand ranges (MtCO₂e)

	Free allocations (no CBAM)	Phase out some free allocations (CBAM)
More companies hedge (all sizes)	150	300
Less companies hedge (> 750 ktCO ₂ e)	75	150

Note: numbers are illustrative and do not reflect any policy decisions

Options and considerations for MSR design



Options and considerations for MSR design

1. Approach to evidence gathering for the review
2. Overview of key risks and considerations for MSR design
3. Focus issues for MSR design
 - I. The TNAC definition and impact of demand/supply sources
 - II. The future of hedging and holdings in the EU ETS
 - III. Potential for threshold effects
 - IV. Invalidation and auction volumes
 - V. Ensuring market balance and price predictability
4. What risks and uncertainties need to be monitored?



Stuart Evans
Senior Engagement Manager
Vivid Economics

Note: the MSR Review is ongoing, this overview of issues and options is intended to stimulate discussion only. Opinions expressed and design considerations identified should not be construed as indicating particular design choices for the MSR, EU ETS or broader EU policy parameters.

The review draws on a wide range of views and sources of evidence to understand the effectiveness of the MSR and its future operation

Quantitative evidence

Vivid EU ETS model

- Leading MSR model used to create deep insight on future MSR performance

Competition modelling

- Insights from Vivid's competition model developed for DG CLIMA

Scenarios

- Developed with DG CLIMA to test likely future scenarios and input to EU ETS model

Survey

- With covered entities to gauge sentiment from market participant on the MSR's impact

Qualitative evidence

Expert interviews

- Experts across various fields impacted by the MSR to provide insight and sentiment

Academic literature

- Extensive literature review by Trinomics and Vivid Economics across key topic areas

Analyst modelling/reports

- Carbon analyst reports, modelling and insight used as input to guide analysis

Public consultation

- EC led consultation allowed for input from a wide range of stakeholders

We have considered the risks associated with the current design of key MSR design aspects and considerations for their future design

MSR design	Risks associated with current MSR design
TNAC definition	The current TNAC definition excludes demand from aviation and linked systems, which could distort the functioning of the MSR.
Thresholds	Changing market size will affect the relevant threshold. Changing hedging behaviour also warrants a reconsideration of threshold levels.
Intake and release mechanism	Intake rate currently legislated to fall back to 12% in 2024, which may not be able to reduce surplus fast enough. The intake/release mechanisms are also prone to threshold effects, with the amount of intake/release independent of the TNAC or market imbalance.
Invalidation	Invalidation is tied to auction volumes, creating unnecessary complexity given how auction volumes depend on other policy choices (including the MSR).
Short term response measures	Current response measures focus on longer term balance rather than short term changes. For instance, the release of allowances is also discretionary.

Focus issue: The TNAC definition and impact of demand/supply sources



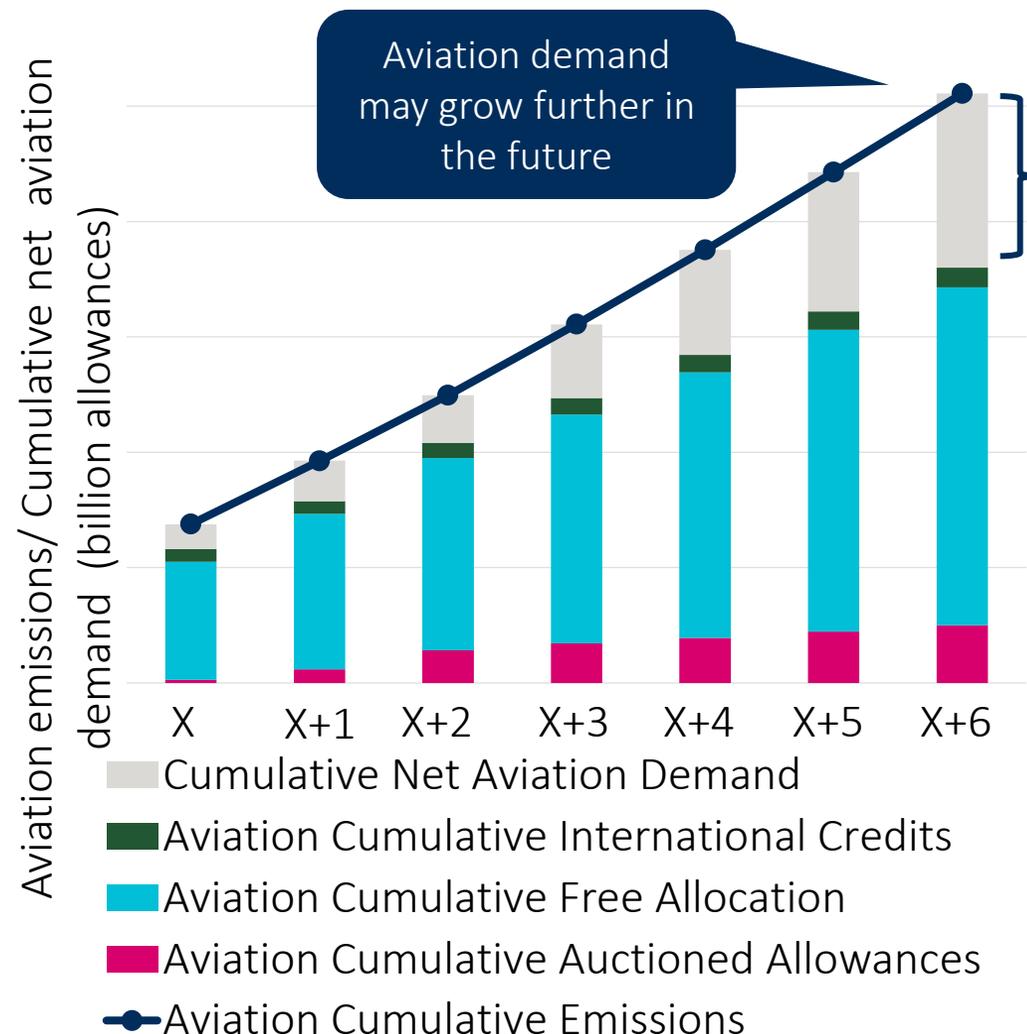
The TNAC is a partial measure of the true market balance

- Sources of supply and demand in the market are not considered (e.g. aviation, demand from Swiss ETS link) which may misrepresent the true surplus
- This imbalance is expected to grow over time
- Other sources of supply and demand may become relevant over time, such as future linked systems or for other uses



The definition could be updated to include additional demand sources

- Maintain current TNAC definition
- Adjust to include other sources of supply and demand such as aviation, linked system, demand from effort sharing etc.



Focus issue: The future of hedging and holdings in the EU ETS



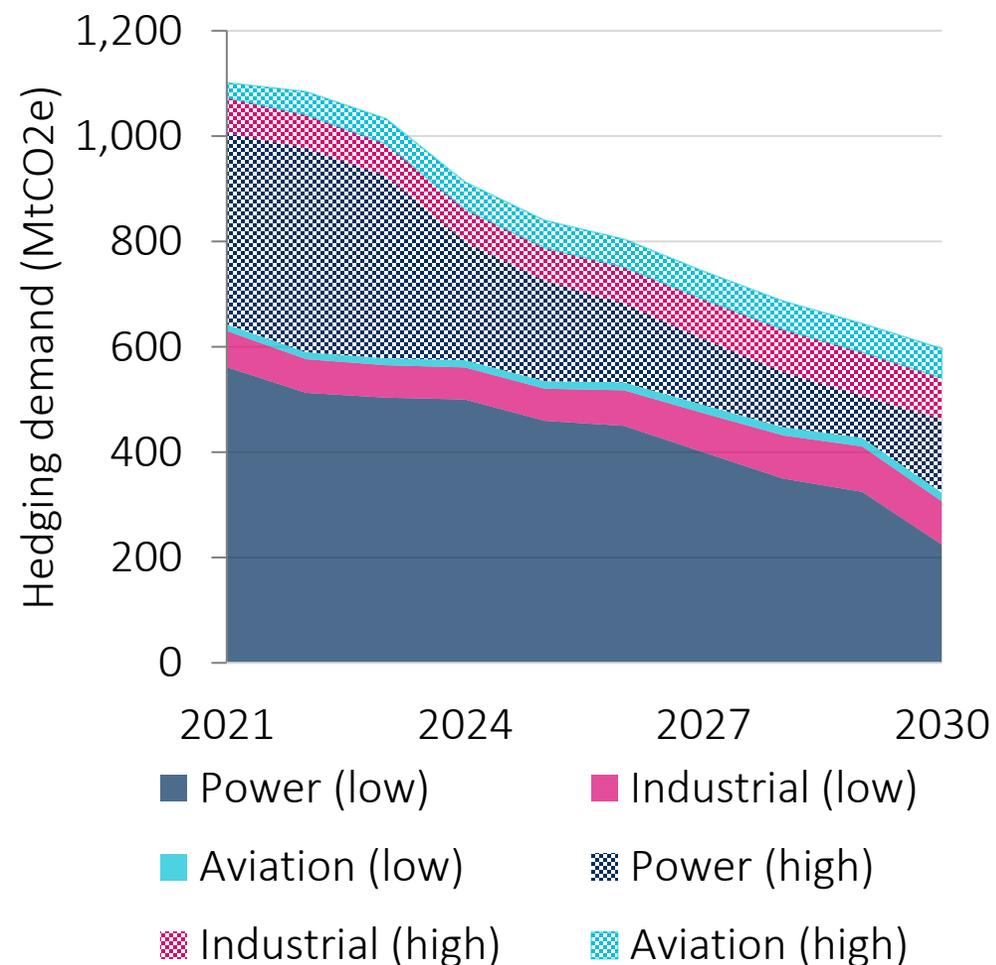
Hedging behaviour is changing

- Demand for hedging has been used to calibrate MSR thresholds, to identify an efficient level of surplus of allowance holdings
- The composition of demand and market behaviour is changing, leading to changed hedging needs
- Changes in policy, e.g. expansions of scope, or potential CBAM and reduction of free allocations, could lead to further behaviour change



Thresholds could be adjusted in response to changed behaviour

- Maintain current high/low thresholds
- Adjust thresholds, this could shift to a different absolute level or a 'dynamic' threshold that moves with the cap or other



Focus issue: Potential for threshold effects



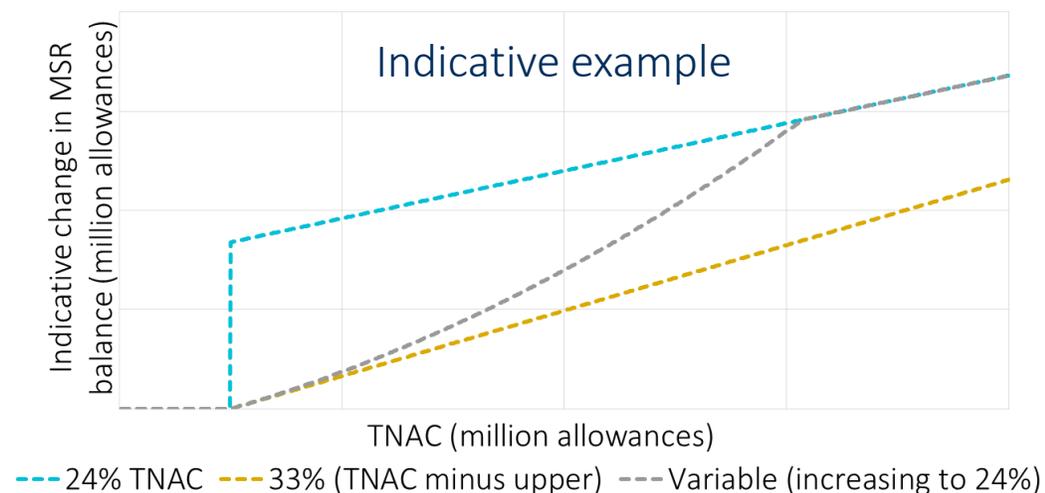
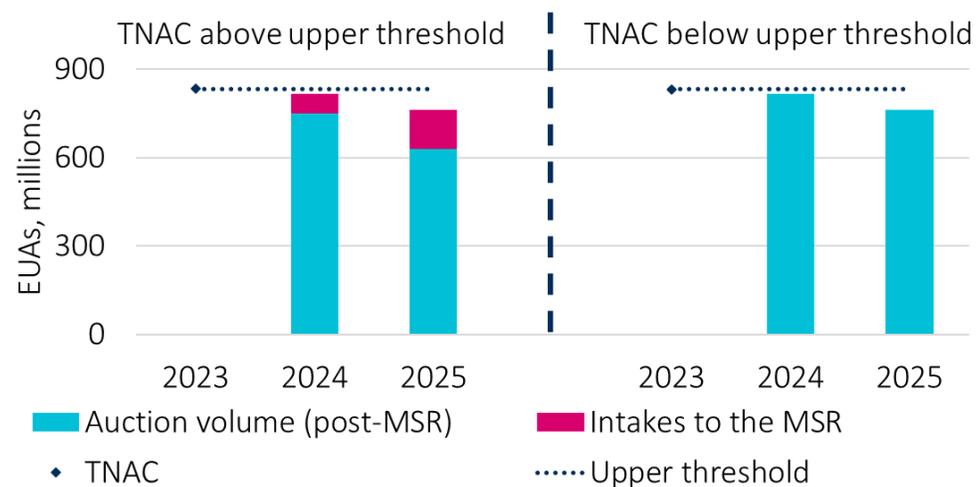
MSR thresholds create the possibility of uncertainty

- Under current design, when the TNAC approaches thresholds, there is significant uncertainty regarding MSR response
- If the TNAC is just above upper threshold, then removals occur, while if just below no removals occur, this reduces policy predictability
- Sufficient sensitivity is needed to ensure adequate response to shocks



Thresholds could be adjusted to remove this possibility of uncertainty

- Maintain current approach with threshold effects
- Approaches to reduce or remove threshold effects, such as variable intakes and intakes relative to marginal surplus/deficit



Focus issue: Invalidation and auction volumes



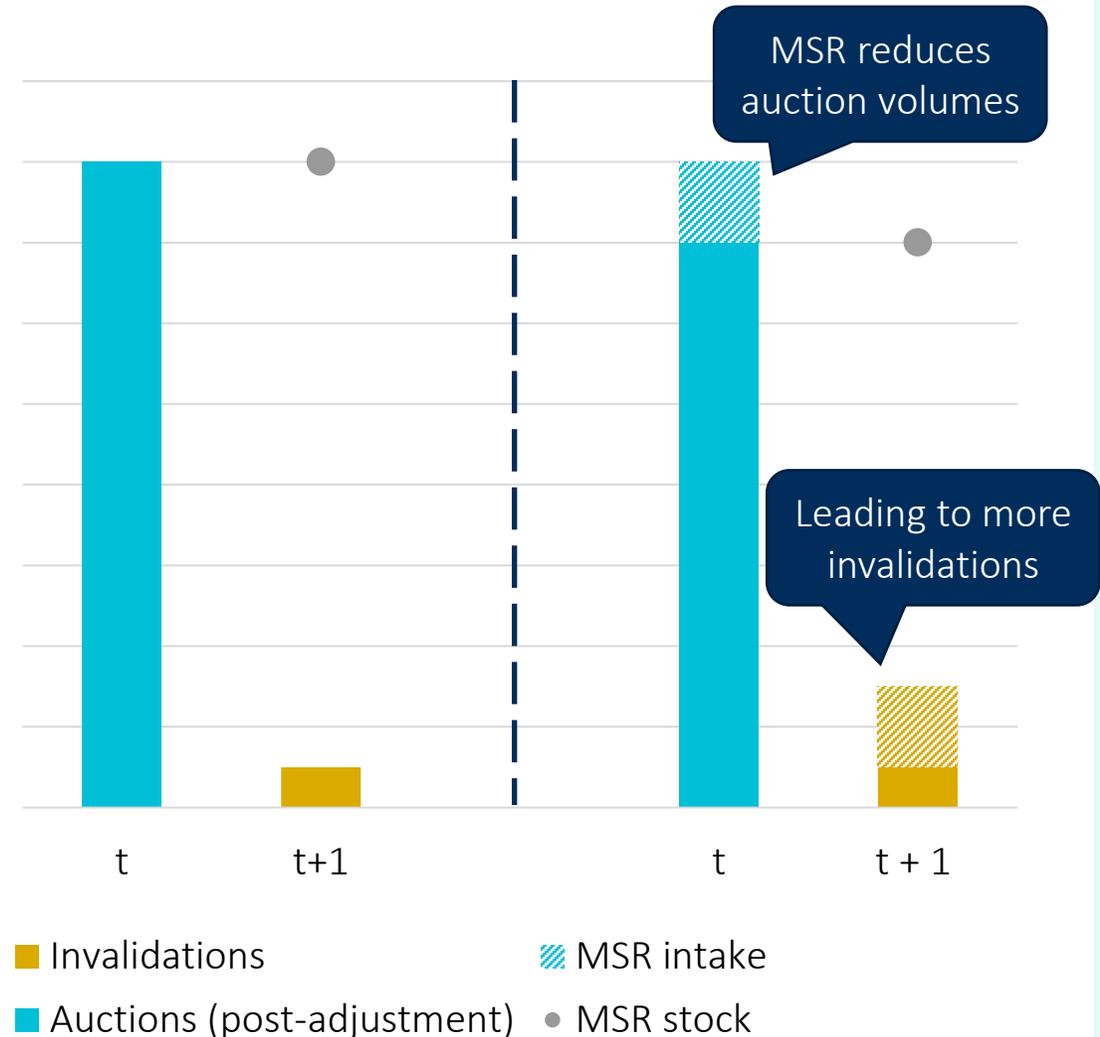
Invalidation's link to auction volume creates the risk of feedback loops

- Invalidation is currently tied to auction volumes, which creates ties to other policies (like scope)
- This means that the a recent MSR adjustment can have an outsized impact on invalidations



Adjustments to the invalidation link could reduce the risk of interactions

- Maintain auctioning volumes approach
- Consider invalidating allowances after they have been in the MSR for a certain time period; invalidate allowances above a predetermined threshold; link threshold for invalidation to cap level rather than auctions; remove invalidation mechanism



Focus issue: Ensuring market balance and price predictability



Some stakeholders have identified price-based measures as being desirable

- Rationale for price based measures is to provide longer term certainty to avoid high or low prices, in order to provide certainty for investment and avoid excessive costs
- The academic literature has identified specific challenges for the MSR from anticipatory banking if market participants anticipate enhanced ambition. The TNAC may increase in the short run before reducing in the longer run.



There are provisions in place in the event of excessive price fluctuations

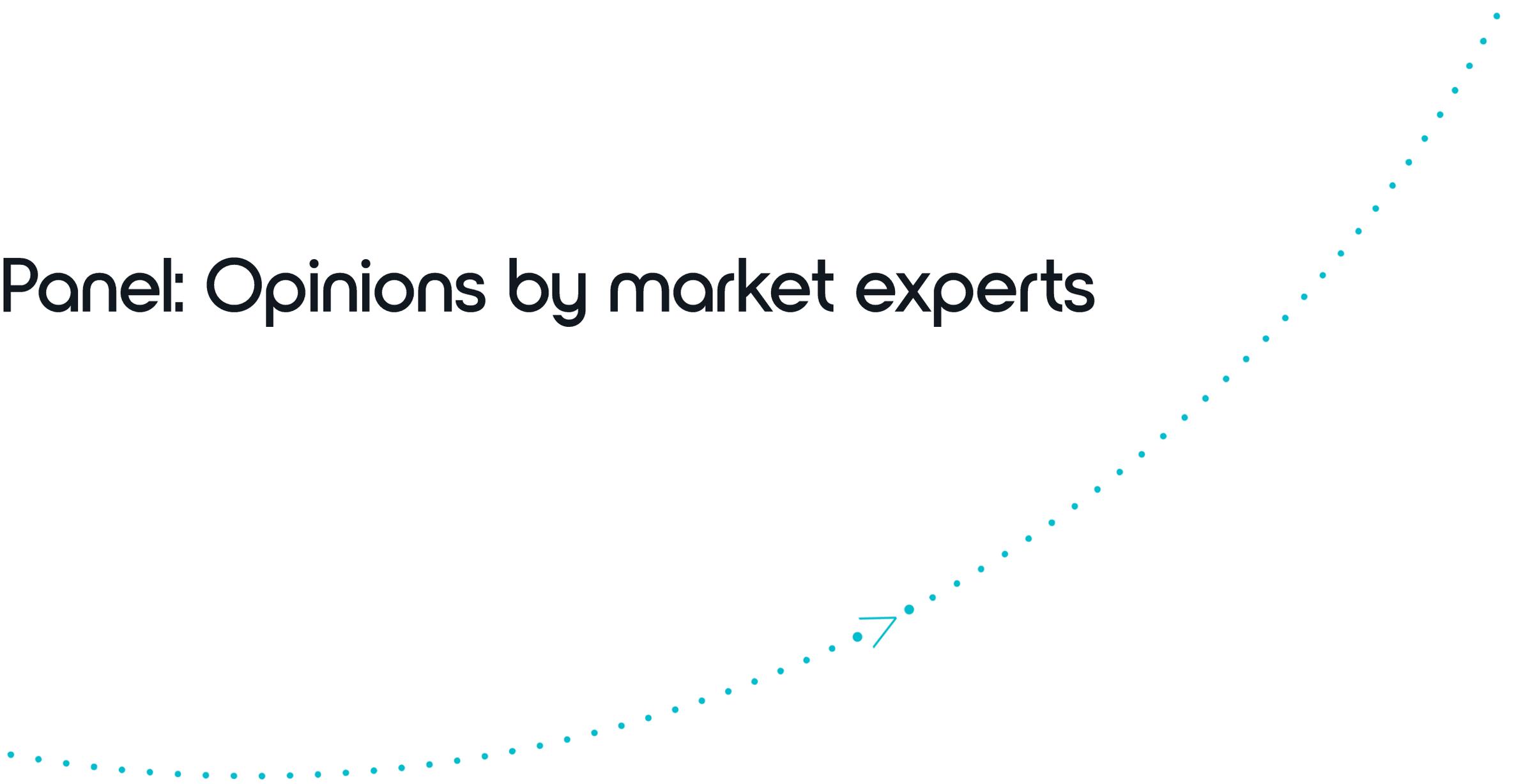
- Article 29a provides additional supply with clear limitations, applying when for more than six consecutive months, allowance prices are more than three times the average price from the previous two years
- Approaches to price based measures can take a variety of forms, as seen in other jurisdictions, including auction reserve prices and price corridors

Future uncertainties and things to monitor

- Hedging demand developments (utilities, industrial, aviation)
- Long term investment and speculative holdings
- Developments regarding potential CBAM and changes to free allocations
- Implications of MS policy and potential ETS linking
- Evolving relationship between price level and TNAC volumes

Implications: change in the market is accelerating, and monitoring will be needed to ensure that the MSR remains fit for purpose over the course of Phase 4

Panel: Opinions by market experts



Panel Presentations



Hæge Fjellheim
Head of Carbon Research
Refinitiv

The evolution of carbon prices under the MSR



Jahn Olsen
Head of European Carbon
BloombergNEF

The effect of the MSR on market participation



Andrei Marcu
Executive Director,
European Roundtable on
Climate Change and
Sustainable Transition

MSR policy design in the context of broader EU policy



Marcus Ferdinand
Head of EU Power &
Carbon Analytics
ICIS

Discussion on the MSR's impact under different policy designs

• Contact us

Vivid Economics Limited
163 Eversholt Street
London NW1 1BU
United Kingdom

T: +44 (0)844 8000 254

enquiries@vivideconomics.com

vivideconomics.com