

EUETS Futures: policy options for a smart EUETS in a volatile world

- A discussion paper on policy options for Phase 5 -

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Executive Summary

The EUETS has proven its effectiveness over the last decade. The market has been largely stable, with prices at appropriate levels, despite the pandemic and two wars that have disrupted world energy supply. Its continuing effectiveness has shown the system to be robust, in large part due to the operation of the Market Stability Reserve (MSR).

In July 2026, the European Commission is due to publish its review of Phase 5 of the EUETS, which covers the 2030s. As part of the development of Phase 5, a range of interacting design features and parameters will need to be specified that together are consistent with emissions reductions goals. The elements of design that need to be specified go well beyond simply setting a level for the Linear Reduction Factor (LRF), important though that is.

Among other things, mechanisms are needed to ensure that the EUETS remains robust to risks from changes in circumstances and unexpected outcomes, and any market imbalances that may arise as a consequence. This is especially the case if volatile international circumstances continue to prevail.

The MSR is currently the main mechanism for dealing with such risks. However, circumstances in the 2030s will be very different from those prevailing when the MSR began operation in 2019. It is likely that the MSR will at least need to be updated to recognise new circumstances, for example by adjusting thresholds. Other mechanisms may also have a role to play in maintaining the stability of the EUETS. For example, existing provisions to respond to price volatility under Article 29a could be expanded. Various combinations of approaches are possible. For example, price-based triggers could be integrated with the operation of the MSR to allow release of allowances from the MSR if certain price thresholds are reached.

This discussion paper provides a brief overview of some of the design options that are available to address the risks associated with market imbalance. It is intended to help structure discussions around the proposals, with a view to achieving smarter policy design. The Table summarises the options that need to be considered.

Options need to be considered together, as they may interact. For example, the effect of additional allowances from the New Entrant Reserve (NER) reaching the market may depend on the provisions of the MSR.

Some Design Options for Phase 5

Design Feature	Notes
Determining the supply of allowances	
Starting point for cap – whether it is rebased at end of Phase 4	The number of allowances already in circulation also affects supply
Linear Reduction Factor (LRF)	This is set to increase to 4.4% for Phase 4 as of 2028, but may take different and varying values in Phase 5.
Treatment of New Entrant Reserve	In particular, whether and when allowances in the NER from Phase 4 are made available to the market.
Inclusion of permanent removals	These may be included as individual units in trading or in aggregate.
Inclusion of Article 6 volumes	Subject to robustness of processes
Risks and market stability	
MSR thresholds	Likely to need to be reduced, and perhaps smoothed to reduce threshold effects
Rate of transfer to and from the MSR	This is currently set at 24%, which was intended to be a temporary measure
Design of invalidation (cancellation) provisions	For example, could they be on a sliding scale?
Enhancing Article 29a	For example, release of allowances from the MSR in response to price
An auction reserve price	In line with that prevailing in other jurisdictions
Dynamic cap adjusting to outcomes	Rule based to give predictability

Among these options, the following seem to have significant potential advantages, and therefore merit particular attention in the policy debate:

- Retention of an invalidation clause for the MSR, likely including a sliding scale for invalidation – the larger the surplus, the greater proportion invalidated.
- Extension of Article 29a provisions to release allowances from the MSR if the EUA price exceeds a certain level, broadly in line with similar provisions in the California ETS. This could result in a modified version of the MSR, with different tranches of allowances held in reserve. Ideally this would be accompanied by an auction reserve price.

- Reform of other aspects of the MSR, especially thresholds.
- Only allowing restricted types and numbers of removals to be introduced (in particular excluding removals from LULUCF) up to some aggregate limit. Any removals included must be physically permanent.

Other measures will still be needed alongside the EUETS. In particular there will be a need to continue to invest in grids and renewables, and this should be a priority.

Global volatility appears to be here to stay, while climate change is an ever-growing threat. Both issues have a clear solution: building a competitive carbon-free economy in Europe as rapidly as we possibly can, while accelerating efforts to ensure emerging prosperity can be shared broadly. This will provide an essential example to the rest of the world.

1. The EUETS: now a success despite past limitations and current challenges

1.1 Developing long-term success

Action on climate change is an area in which Europe has led the world. The EUETS has been a cornerstone of this leadership, making a major contribution to reducing Europe's emissions. It has been particularly effective in the power sector.

It has consistently operated under an open, rules-based approach, making use of market mechanisms. **Arbitrary intervention in the market has been largely avoided.** This has in turn increased its effectiveness, acceptance and above all, its credibility – which has translated into increasingly higher carbon prices and also increasingly higher financial revenues for all Member States of the European Union.

The EUETS has grown to include additional policy mechanisms for enhanced efficacy. The most notable example is the implementation of Carbon Border Adjustment Mechanisms (CBAMs), which is ensuring that the carbon price extends to imports, and is thus helping to level the playing field for European industry. The EUETS is thus making a major contribution to building a prosperous and sustainable future for the people of Europe and beyond.

It has also provided global leadership. Over the twenty years it has been running it has stimulated partners of the EU to adopt carbon pricing, Turkey being only the most recent one. This has been achieved despite the international turmoil of the last few years, as trade rules, international norms and alliances have been subject to unpredictable changes. Among other things, the recent supply-side shocks and related energy price spikes caused by two separate wars in the 2020s have made fossil fuel dependency ever-more dangerous. This has meant that the urgency of shifting away from fossil fuels has never been greater, as Europe is now facing both a regional and a global dead-lock when it comes to its imports of fossil fuel and related dependencies.

Nevertheless, success took time to build. The EUETS has not always delivered a price signal sufficient to drive investments into less polluting technologies. From 2012 until 2018 the price stayed below €10/tCO₂. Only subsequently, with the introduction of the MSR and its built-in cancellation clause, did prices rise to more adequate levels. Steady development of the EUETS to adapt to changing circumstances will continue to be essential to its effectiveness, while maintaining the policy options which have proven successful in raising the carbon price (especially the MSR invalidation clause). These can and must be the basis of future developments.

1.2 The role of the MSR to date

The introduction of the MSR has been among the most significant changes to the EUETS in the two decades of its existence. The MSR began operation on 1st January 2019. It was intended to maintain a balance of supply and demand for allowances by establishing a

mechanism to withdraw allowances when there was a significant surplus, and to return allowances to the market when there was a shortage.

In reality, a very large surplus of allowances had accumulated by the mid- and late- 2010s, keeping the price of allowances too low to be effective. Among other influences, the Paris Agreement meant the EUETS had to be strengthened if it was going to remain the EU's cornerstone climate policy. As a result, the 2016-2018 revision saw it introduce innovative policy mechanisms to make the system more dynamic and limit the surplus. The surplus was otherwise expected to continue to grow, including with many billions of allowances in the MSR, which overall risked destabilising the wider market.

Provisions to invalidate (cancel) allowances from the MSR were introduced to increase the effectiveness of the MSR in the context of the very large surplus. Invalidation of allowances began in January 2023. By January 2025 a total of around 3.2 billion allowances had been cancelled. However, there is still surplus allowances to be eliminated. Over the remainder of Phase 4 of the EUETS, which runs to 2030, it is expected that roughly a further 0.4-0.7 billion allowances might be cancelled under current arrangements.

This invalidation clause has been a major step towards long-term emissions reduction goals, and gave Europe a comparative advantage when it came to climate action globally. The MSR clause became proof that Europe was committed to its long-term carbon neutrality goals, which in turn increased the value of EUAs and increased certainty for investments in cleantech.

Going back on previous progress now would translate to using hundreds of millions allowances from a previous surplus to enable continuing emissions - this is unlikely to be compatible with existing emissions reduction commitments and would set a bad normative example globally. It would also very likely create volatility and unpredictability in the EUA market, which is not conducive to investments and does not support bankability of the more expensive projects in industry, some of which intend to use free allowances.

The successful reduction in the surplus, through the MSR cancellation clause, and the prospect of continuing action, has also led to more efficient pricing. This attracted many participants to the EUETS market back into trading EUAs, having previously made little use of their active accounts on the trading platform. The policy had finally developed some teeth and provided a commitment to the long-term scarcity which acts to bolster the current price of the allowances.

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Before the decision to establish the MSR and its built-in cancellation clause, prices were below €10/tCO₂. This was insufficient to drive adequate emissions reductions. However, prices have steadily risen as actions to reduce the surplus have extended and became more firmly established, including by reaching in 2023 the milestone of €100/tCO₂. Prices are now

(June 2026) around €75/tCO₂ which is closer to estimates of the price necessary for decarbonisation.

1.3 Future challenges

As the EUETS moves into Phase 5, which runs through the 2030s, new challenges will arise. In July of 2026, the Commission is due to publish its review of Phase 5. As part of the process for establishing Phase 5, a range of interacting design features and parameters will need to be defined that together are consistent with emissions reductions goals. Among other things, mechanisms are needed to ensure that the EUETS remains robust to varying circumstances and unexpected outcomes, and the imbalances in the market that may emerge as a result.

While an effective EUETS is necessary to achieving Europe's climate goals, it will not be sufficient. Other actions are needed, notably the development of grids all across the EU and continuing support for renewable energy, including for European manufacturers of renewable energy components. Ensuring that the EUETS interacts effectively with these other policies will be critical to the success of the EU's climate policy as a whole and must therefore be considered in designing the EUETS for Phase 5. However, these issues are beyond the scope of this document.

In this short review, we look at the elements making up the supply of allowances, and the mechanisms that are needed to manage the risks of market imbalances.

2. The Supply of Allowances

The number of allowances available to the market over time (net of any removals) must be consistent with emissions reductions goals. The total supply of allowances will be dependent on several factors.

- The starting level of the cap, including whether it is rebased to real emission levels at the end of Phase 4.
- The Linear Reduction Factor (LRF), which may vary from its current value, and may change over the course of Phase 5.
- Any surplus carried forward from Phase 4.
- The number of allowances in the MSR, and whether these are made available to the market and in what circumstances.
- Whether and when allowances in the New Entrant Reserve come into the market. Current indications are that they are likely to be auctioned. This has to be managed carefully.
- The role of permanent removals of CO₂ from the atmosphere, which are currently excluded from the EUETS, but may be made available during Phase 5. They may be included either in aggregate or as separately tradable allowances.
- International emissions reductions under Article 6 of the Paris Agreement.

Changes to any one parameter will usually change supply. Consequently, choices about all of the parameters must be made together, and implemented together as part of a package. If they are not, there is a strong possibility that the total will be incompatible with climate goals.

3. Managing Risks of Market Imbalances

So many factors affect the demand for allowances that there will inevitably be some respects in which outcomes differ from expectations, with consequent risks of imbalances in the market. Factors affecting demand include, among others: the pace of deployment of renewables, timing of coal phase-outs, the electrification of end-use and the implications for the demand for electricity, energy efficiency improvements, investments in grids, deployment of new industrial processes, decisions on investment in the industrial sector, demand for aviation, and progress in decarbonising shipping.

Demand could also be affected by any further changes to scope of coverage, including which sectors are covered. It is impossible to determine the effects of all of these in advance, however carefully the work is done. There will also be uncertainties in supply, especially if removals or international credits are included. Indeed, allowing international offsets was one of the causes of oversupply during Phase 2, which led to their subsequent exclusion.

It is for these reasons that a stabilising mechanism, such as a robust MSR which continues to include cancellation options, is key.

4. Mechanisms available for managing risks

The inevitable risks of unexpected outcomes mean that ways of managing the risks of market imbalances are needed. Several mechanisms are potentially available to do this. These may be used individually or in combination, including hybrids between the various mechanisms. The main types of mechanisms are as follows:

- The MSR in its current or revised form, with invalidation mechanisms included
- Banking allowances by market participants
- A variable cap, which may include rebasing of the cap
- Price based mechanisms that extend provisions currently in the EUETS Directive

4.1 An updated MSR

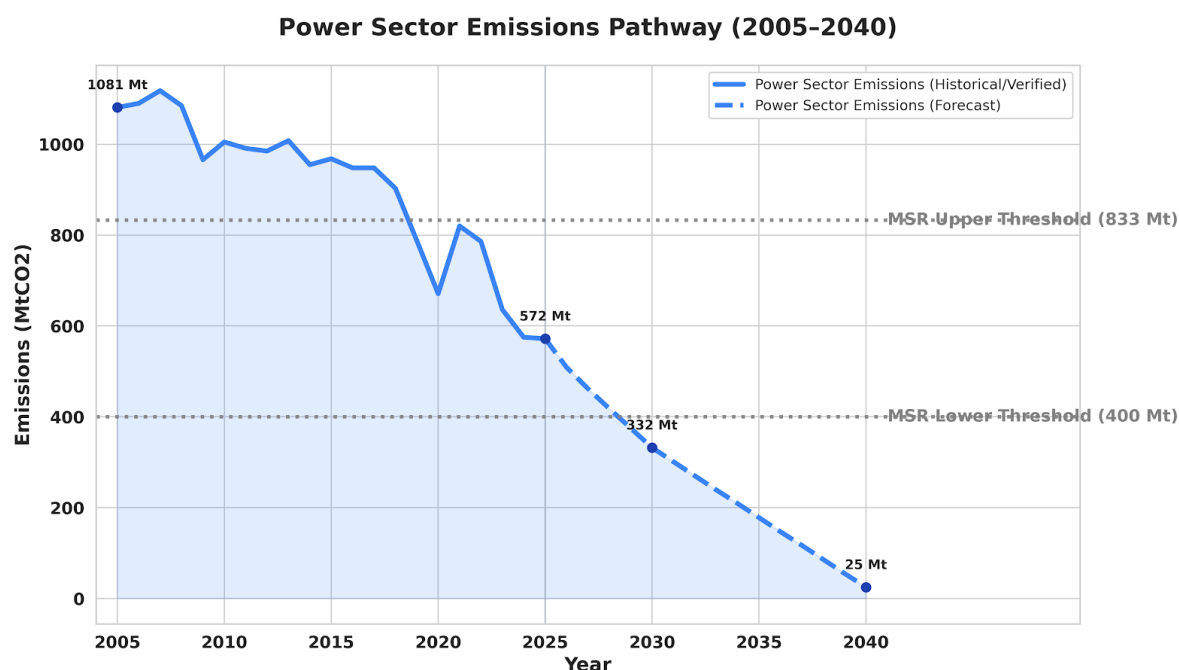
The MSR is currently the main mechanism for managing market imbalances. It has been highly effective in reducing the surplus of allowances, although there is still some way to go until the surplus is fully eliminated.

However, the MSR was introduced in circumstances very different from those that will prevail in Phase 5. To maintain its effectiveness, it is likely to need modification. There are various options for updating the MSR to match new circumstances and to work effectively with other elements of the EUETS. Possible modifications include changes to:

- upper and lower thresholds for transfer of allowances,
- the form of the invalidation clause,
- the rate of transfer of any surplus to the MSR

For example, the current thresholds in the MSR were set at a level sufficient to allow for hedging in the power sector when the MSR was first introduced. However, by the start of Phase 5, power sector emissions are likely to be only around half of the level they were when the MSR was introduced, and are expected to fall much further during Phase 5 (See chart). Thresholds will also be much larger relative to the cap.

Chart: Illustrative reductions in power sector emissions under the EUETS



Source: online analysis

A phased approach to changes may be appropriate. There might, for example, be a pre-determined decrease in thresholds each year, analogous to the LRF for the cap.

The threshold for cancellation of allowances may also be updated. It has already been amended: it was formerly set relative to the previous year's auction volume, but now corresponds to the threshold of return to the market.

Other variations are possible. For example, a sliding scale could be established -the greater the number of allowances held in the MSR, the greater the proportion of allowances

invalidated. This may help reduce any “edge” effects, where there are sudden changes as a result of being one side of a threshold. One illustrative variant of this is shown in the table. For example, if the MSR contained 600 mtpa the number of allowances cancelled would be 60 million (20% of 400-500 + 40% of 500-600).

Table: Illustrative example of a sliding scale of invalidation

Number of allowances in the MSR (millions)	Proportion invalidated over each interval
0-400	0
400-500	20%
500-600	40%
600-700	60%
700-800	80%
800+	100%

In a similar way, rather than step thresholds for flows to and from the MSR, thresholds could be modified or smoothed to give a more gradual change in flows of allowances to and from the MSR.

4.2 Banking of allowances

Banking has been a feature of the EUETS since Phase 2. It allows market participants to manage the timing and extent of emissions reduction by carrying allowances forward to future periods. The total amount of banking is set by the market, reflecting the aggregate views of market participants.

Without the invalidation clause, the MSR would be effectively a form of mandated banking applying to the market as a whole. The degree of banking under the MSR is set centrally, rather than reflecting outcomes of decisions by individual emitters.

In specifying an MSR design for Phase 5 careful assessment is needed of the balance between private sector banking and the MSR. In some respects, allowing the market to set the level of banking may be preferred, because decisions about the amount of banking will reflect additional information from market participants. This may, for example, imply restricting the role of the MSR to dealing only with large surpluses, in particular retaining it as a mechanism for invalidation of surplus allowances.

4.3 A Self-Adjusting Cap to ensure continued relevance (Dynamic Cap)

The MSR seeks to manage risks by adjusting the number of allowances available to the market. This can also be done more directly by adjusting the cap. A number of such mechanisms have been proposed. They include the following.

- A one-off adjustment (rebasing), for example reflecting actual emissions at the start of a Phase.
- A periodic adjustment (for example, an annual adjustment), based on actual emissions and other criteria such as any prevailing surplus.
- The cap is reset by an independent authority based on a specified set of rules or mandate. In discussing such proposals reference is often made to the analogy with a central bank in the context of monetary policy.

Such approaches could to some extent effectively integrate the effects MSR into the wider EUETS by establishing a dynamic or self-adjusting cap in the basic mechanism. In these circumstances the MSR itself may no longer be needed in its current form, although it might serve some remaining function, for example if a very large surplus were to re-emerge.

There would need to be consideration of whether any cap adjustment was one-way (down only – a ratchet effect) or both up and down, perhaps with a limit on not going above the level originally specified at the start of the phase.

4.4 Price-related mechanisms

As the market becomes smaller, and potentially less liquid, the chance of prices reaching extreme values may increase. This remains the case even if there are quantity-based systems such as the MSR in place. Even if MSR thresholds are revised, it will be intrinsically difficult to judge how prices may react over time. This may apply especially towards the end of Phase 5, when the character of the market is unprecedented, for example with volumes being a small fraction of those prevailing through preceding phases (though still large in financial terms compared with many markets).

There are already provisions within the EUETS to take action in the event of very rapid price changes. Article 29a of the Directive enables intervention in the market if there are large sudden price rises.

These provisions could be extended or enhanced. In particular, they could be modified and extended to react to the level of prices rather than the rate and extent of change. For example, additional allowances could be released from the MSR once a certain price threshold has been reached.

Such an arrangement could represent a hybrid between the MSR and a more purely price-based approach. For example, limited numbers of allowances held in the MSR would be released, rather than unlimited amounts of new allowances issued. This would resemble the functioning of the Allowance Price Containment Reserve (APCR) in the California system,

which releases additional allowances to the market in response to prices rising above threshold levels. It need not extend to the provisions of the additional arrangements in the current California system, which set a price ceiling by allowing quantities of allowances additional to the cap to be created.

Measures common in other emissions trading systems could also enhance the EUETS. For example, an auction reserve price for allowances could complement price thresholds for the MSR.

Price based mechanisms might have a number of characteristics that influence other policy measures, and hence investments in low carbon production. For example, the confidence in pricing impacts of CBAMs be affected by perceptions of likely great price stability in markets for EUAs. Similarly, perceptions of the remaining value of free allocation of allowances may influence investment decisions.

5. Recommendations

This is a discussion paper, and so does not seek to provide recommendations for detailed policy choices. Instead, we suggest that the following approaches seem to have significant potential advantages, and therefore merit particular attention in the policy debate:

- Retention of an invalidation clause for the MSR, likely including a sliding scale for invalidation – the larger the surplus, the greater proportion invalidated.
- Extension of Article 29a provisions to release allowances from the MSR if the EUA price exceeds a certain level, broadly in line with similar provisions in the California ETS. This could result in a modified version of the MSR, with different tranches of allowances held in reserve. Ideally this would be accompanied by an auction reserve price.
- Reform of other aspects of the MSR, especially thresholds.
- Only allowing restricted types and numbers of removals to be introduced (in particular excluding removals from LULUCF) up to some aggregate limit. Any removals included must be physically permanent.

Other measures will still be needed alongside the EUETS. In particular there will be a need to continue to invest in grids and renewables, including by stimulating their manufacturing in Europe, and this should be a priority.

About the authors

Suzana Carp has a decade worth of experience with the EU ETS, having worked on different aspects of it in all her previous roles (Head of the Brussels office for Sandbag (2016-2020), Political Strategy Director at Bellona (2020-2021), Deputy Executive Director at Cleantech for Europe (2022-2025) and now as Co-founder of Cleantech for Central, Eastern and SouthEastern Europe and Founder of Clean European Futures (2025 - present).

Adam Whitmore has worked on climate policy in senior positions in consulting, industry and NGOs over several decades. He was Chief Advisor on Energy and Climate Policy for one of the world's hundred largest companies, and Director in the Economic Consulting practice of one of the big four professional services firms. He has many years EU climate policy, including as Head of Policy at Sandbag where he worked on the design of Phase 4 of the EUETS. More recently he worked for Bellona on a range of topics including CDR.