

## Reforming the EU ETS: give it some work!

**The European Commission is inviting stakeholders to respond to six proposals it has laid down for structural reforms of the EU Emissions Trading Scheme (EU ETS). We identify three main weaknesses that affect the functioning of the EU ETS: insufficient credibility of long-term scarcity, the consequences of interactions with other energy policies and the lack of regulatory clarity to respond to extraordinary demand conditions. In our view, the best option proposed is the early revision of the annual linear factor. We further encourage European authorities to avoid the ETS to become a residual policy. Additionally, greater clarity should be given on the governance of supply in the event of future extraordinary demand shocks.**

### Background: why does the EU ETS need structural reform?

#### *The EU ETS has been a success in several important ways...*

The carbon market has performed just as it was designed to in two important ways. Firstly, a number of studies have shown that the EU ETS has driven abatement, most notably through fuel switching in the power sector<sup>1</sup>, but also in other industries<sup>2</sup>. Not only does the carbon price exist, therefore, but key emitting sectors are clearly taking it into account in their production and short-term abatement decisions.

Secondly, Phases 1 and 2 of the EU ETS have demonstrated that carbon prices in times of low political uncertainty adjust to market fundamentals to ensure that the emissions target is reached at minimal economic cost. This has been demonstrated in the EU ETS literature, which has shown the clear correlations between carbon prices and relative fuel prices, which are a proxy for marginal abatement costs<sup>3</sup>. It has also been evident from the impacts of significant events on the EUA price. The fall in the carbon price from a peak of 25-30€ to around 6.5€ during Phase 2 is a good example of it, as it is a rational response to the fact that the European economic situation has meant that no new abatement will be required to achieve the ETS's Phase 3 environmental objectives. The carbon market mechanism has therefore shown a strong ability to adjust, as intended, to short- and medium-term market fundamentals to deliver a pre-determined level of abatement at the minimal necessary economic cost.

#### *...but the low carbon price has revealed three weaknesses in its current design*

The crash in the carbon price during Phase 2 was not inevitable, even after taking into account the large decline in economic output of EU ETS sectors and the current emissions objectives. In our view, the EU ETS suffers from three structural weaknesses, which have been exposed by the drop in the carbon price during Phase 2 (2008 – 2012): a lack of sufficiently credible commitments on the post-2020 cap; an insufficient level of abatement ambition after allowing for abatement driven by other policies and international credits; an absence of flexibility in response to extraordinary events impacting the demand for allowances.

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<sup>1</sup> Cf. McGuinness and Ellerman (2008) for evidence from Phase 1; Delarue et al, (2010), Sartor and Berghmans, (2011) for Phase 2; Sijm et al, (2006) and Fabra and Reguant, (2013) for internalisation of CO<sub>2</sub> costs in by electricity market actors.

<sup>2</sup> Cf. Buchner and Ellerman (2008), Abrell et al. (2011).

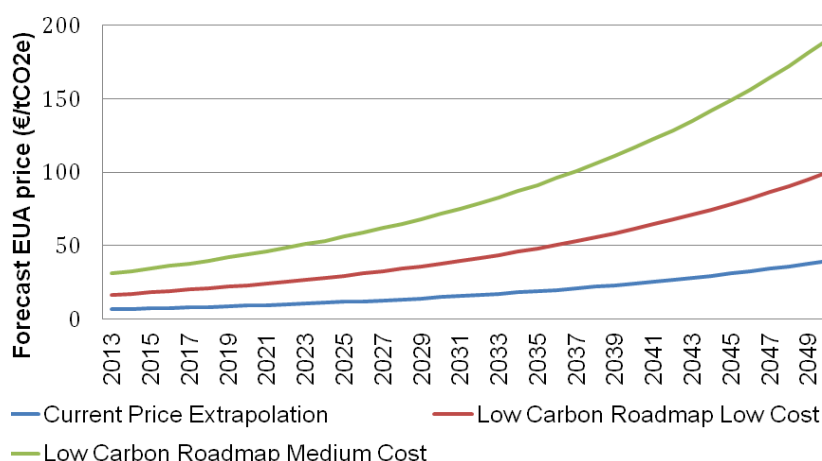
<sup>3</sup> Cf. Chevalier (2011) for a review of the literature.

## 1. A strong long-term “investment signal” cannot emerge without a more credible commitment to long-term allowance scarcity

A common critique of the EU ETS as it stands currently is that the carbon price is too low to provide incentives for long-term investments in abatement (Calel, 2013). Indeed, realistic estimates of the carbon price required to drive meaningful shift towards low carbon technologies are much higher than what the current carbon price suggests (see Figure 1). This is a weakness of the EU ETS at present because it risks locking in carbon-intensive capital and technology, thus making ambitious emissions targets much more costly to achieve in the future.

But a robust carbon price signal reflecting long-term abatement costs cannot emerge if there is a lack of credible commitment by policymakers to a long-term emissions cap in the ETS. For example, the revised ETS Directive of 2009 defined Phase 3 emissions caps out to 2020, but left the caps open to possible renegotiation linked to the (uncertain) outcomes of international negotiations during Phase 3. Any reform of the EU ETS must therefore not simply focus on short-term adjustments to lift the carbon price, but must tackle the underlying reasons why the EU ETS is failing to provide these longer-term investment signals. The formal adoption in a legally binding document of the Roadmap 2050 for a low-carbon economy would help to build political credibility in the European ETS.

**Figure 1- Market Implied Current EUA price pathway to 2050 vs. Abatement Cost Forecasts of Low Carbon Roadmap**



Source: CDC Climat Research

Notes: this Figure shows an extrapolation of the average Jan-2013 EUA day-ahead futures prices as quoted on ICE, out to 2050, based on an assumed real risk-free discount rate of 5% p.a (the blue line) compared with two similarly discounted 2050 EUA prices forecasts as reported in the European Commission's Low Carbon roadmap impact assessment.

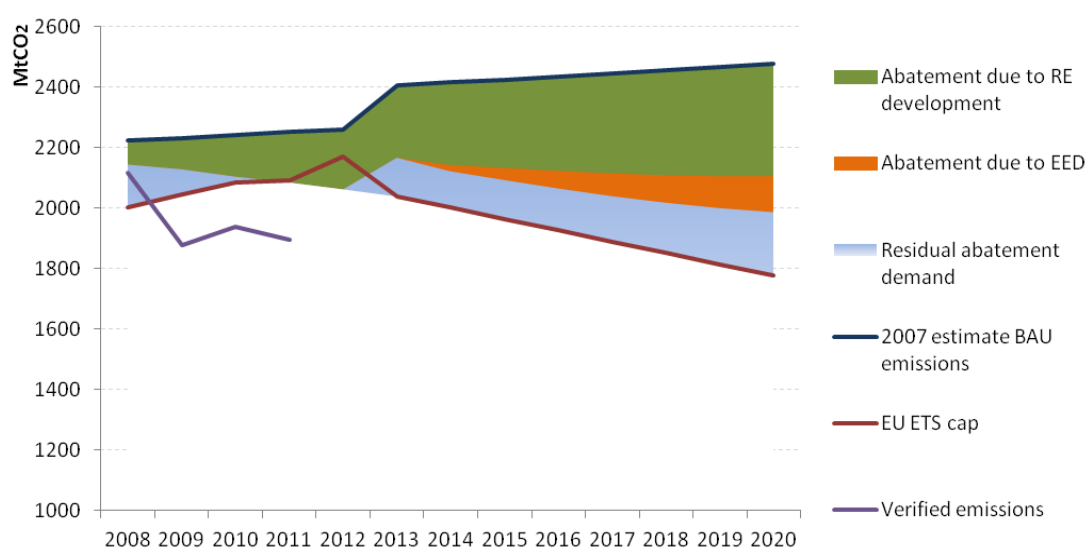
## 2. Strong policy interactions and insufficient ambition left the EU ETS vulnerable to demand shocks

Carbon pricing in the EU ETS is not the only policy driving down CO<sub>2</sub> emissions. In particular, the renewable energy and energy efficiency goals included in the Climate and Energy Package overlap with the EU ETS's CO<sub>2</sub> emission reduction target. Initial projections showed that reaching the 20 % renewable energy target in 2020 will abate a cumulated 2 GtCO<sub>2</sub> compared with baseline in the EU ETS, mostly through the promotion of renewable electricity, as much as 40 % of the overall abatement required in EU ETS perimeter. The recently adopted measures contained in Energy Efficiency Directive (EED) could add 450 MtCO<sub>2</sub> abatement compared to baseline from 2014 to 2020. All this leaves the carbon price emerging from EU ETS to fulfil only half of the required abatement. But from this also needs to be subtracted the 1.6 GtCO<sub>2</sub> allowance of international credit imports over this

period, leaving only around 0.9 GtCO<sub>2</sub> of an originally estimated 5 GtCO<sub>2</sub> of required abatement to be done by the EU ETS (see Figure 2)<sup>4</sup>.

The fact that the EU ETS was left as the residual source of abatement thus left the ETS carbon price particularly vulnerable to a sharp drop in the event of a changing baseline emissions scenario. With other policies still reducing emissions and therefore the abatement load required by the ETS, the additional impact of the drop in the emissions baseline due to the severity of the recession left the ETS carbon price with no work to do to drive abatement – the 2020 abatement objective of EU ETS being almost already achieved. The damaging effects which the current coordination calls for a better calibration and coordination between the level of the ETS cap, the ambition of complementary policies and the amount of credit usage. After all, investors are unlikely to base major long-term abatement decisions on the carbon market if they perceive it to be a residual climate policy.

**Figure 2- Abatement from renewable energy and Energy Efficiency Directive in EU ETS scope**



Source: CDC Climat Research from impact assessment of the Climate and energy package (2008), CITL data, impact assessment on the Energy efficiency directive (2011) and reports on MS' National Renewable Action Plan (2011).

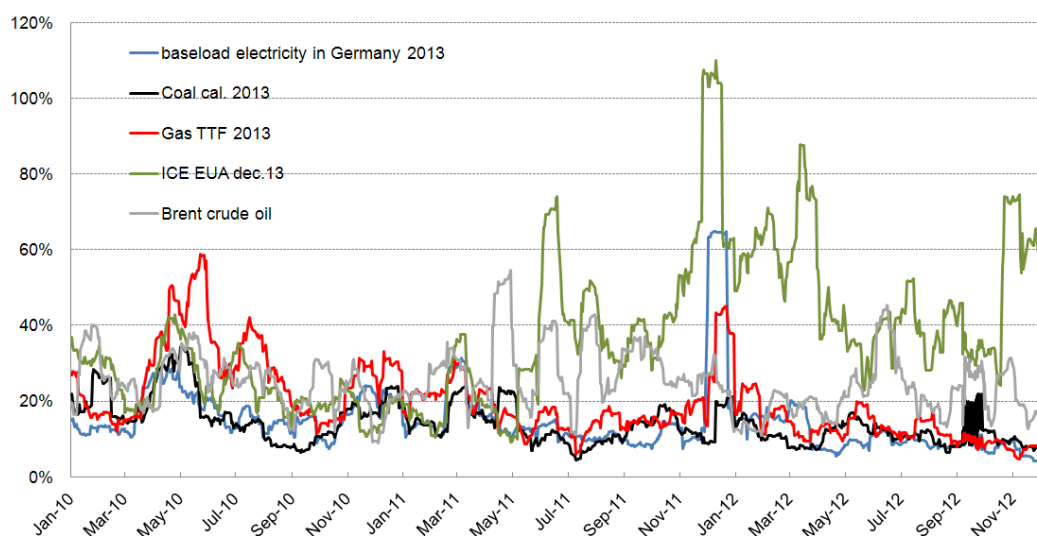
### 3. A lack of regulatory clarity to respond to extraordinary circumstances

There is a persuasive case for arguing that with a sufficient level of ambition relative to other policies, and a sufficiently credible long-term commitment to an ETS emissions cap, that further reforms should not be necessary – certainly the price would not have fallen nearly as much. However, it can equally be argued that at the time of the definition of the Climate and Energy Package policymakers nevertheless decided that the policy calibration left the EU ETS sufficient ambition. What was missing, however, was an ability to adjust the EU ETS carbon cap in response to an extraordinary, unanticipated and lasting decline in industrial production<sup>5</sup>. This has unfortunately transformed the ETS from a mechanism that responded the fundamentals of emissions abatement costs and targets, into one that is increasingly volatile (see Figure 3) as it follows the perceived political fortunes of the Commission proposal to defer the auction of 900 MtCO<sub>2</sub> of allowances in 2013-2015 to 2019-2020 (so-called backloading proposal). This has damaged the credibility of the EU ETS as a policy instrument.

<sup>4</sup> Similarly, emissions standards for local pollutants under the Large Combustion Plant Directive will drive more than 30 GW of coal and oil plants to retire by 2015, and will thereby drive indirectly large carbon emission reductions (Roques 2012).

<sup>5</sup> Post-2020 being the earliest date at which the linear reduction factor governing the supply of allowances in the EU ETS could be changed according to the revised ETS Directive.

**Figure 3 - 21-day rolling price volatilities of EUA vs. other energy commodities and electricity**



Source: CDC Climat Research

There is therefore an argument for institutionalising more timely supply adjustment mechanisms in the event of genuinely extraordinary shocks as part of the EU ETS's future design. However, for any such flexibility to be successful it would need to be reconciled with the potentially competing objective of ensuring regulatory stability and investor confidence in future carbon caps. Since the EU ETS will only be a success if it can stimulate long-term abatement investments, the overriding priority wherever a conflict exists should be the long-term credibility and visibility of the cap for market participants. Indeed, long-term credibility about the abatement objective is a fundamental pre-condition for allowing some shorter-term flexibility into the carbon cap-setting process.

## News: the European Commission publishes six options for structural reform

On 14<sup>th</sup> November 2012, the European Commission has published its first Carbon Market Report which assesses the functioning of the EU ETS. It notes that since the economic crisis unfolded in 2008 the ETS has experienced a surplus of allowances which by early 2012 had reached almost 1 billion and is expected to grow to up to 2 billion by 2020.

The report launches a debate on structural measures to sustainably address this large surplus and sets out six options for measures which could do so.

- Option a: Increasing the EU reduction target to 30% in 2020
- Option b: Retiring a number of allowances in phase 3
- Option c: Early revision of the annual linear reduction factor
- Option d: Extension of the scope of the EU ETS to other sectors
- Option e: Limit access to international credits
- Option f: Discretionary price management mechanisms

The debate on the need for intervention by the European Commission to "rebalance" the EU ETS and to allow the carbon price to support long-term investments in low carbon was opened as of March 2010 with its post-Copenhagen communication<sup>6</sup>.

<sup>6</sup> The European Commission reiterated the need to adjust the supply of EU ETS in all its communications and proposals: communication for the - 30% by 2020 in May 2010, the Roadmap 2050 "For a low-carbon economy" in March 2011, and the impact of the transition to 30% by States Members in January 2012.

## **Analysis: Reform proposals should address structural, not cyclical problems**

### ***The importance of justifying a reform: Is the surplus really the problem?***

Given that an EUA can be used for future compliance without restrictions, banking in an ETS is a normal and rational behavior. If actors anticipate a future scarcity, they will tend to put aside a number of allowances as a hedge against uncertainty about future abatement technology results. This could be important to mitigate future price spikes. It also helps provide necessary liquidity on the market and mitigates the risk of concentration of allowances in the hand of a few actors that could lead to market manipulation. Simply looking at the size of the surplus banked into the future is therefore not enough to justify short-term market interventions or structural reforms of the EU ETS. Structural reforms should address the underlying causes of why the ETS is not providing long-term scarcity signals to stimulate low-carbon investment, rather than focusing on the “symptoms” (e.g. low carbon price, surplus).

### ***Option a: Increasing the EU reduction target to 30% in 2020***

Increasing the EU GHG reduction target would certainly restore scarcity in the market in the short-run as the impact on EU ETS supply would be important: this would equate to the removal of more than 1,5 GtCO<sub>2</sub> of allowances over the 2013-2020<sup>7</sup>. It would thus resolve the thorny issue of what to do with the back-loaded allowances in one fell swoop.

But it also brings a lot of uncertainty on the way to adapt the supply, either through the retiring of a number of allowances (option b) or through the revision of the annual linear factor (option c). A key weakness of this option is that it would mean changing the emissions target for after Phase 3 has already begun. It also would appear to require reopening several aspects of the EU ETS Directive mid-Phase. For example, it would potentially reopen negotiations on the burden-sharing between Member States, the limit on international credits, free allocations to industry, etc... It would be more likely to weaken rather than strengthen stakeholder confidence in the stability of the EU ETS regulatory framework – even though the option has been on the table for a while<sup>8</sup>. This option would not be desirable for the credibility of the EU ETS. Moreover, unless this move is coupled with option c), it would also do little to reduce the lack of clarity about longer-term allowance scarcity signal post 2020.

### ***Option b: Retiring a number of allowances in phase 3***

This option is arguably a short-term measure that focuses only the “symptom” of the problem, i.e. the surplus, but does not address the underlying structural weaknesses of the ETS identified earlier, and would be the one that brings the most uncertainty to the market. Any possible decision to permanently retire 900MtCO<sub>2</sub> back-loaded allowances should preferably be done via an equivalent adjustment to Phase 4 emissions caps. Waiting for Phase 4 has the major advantages of not risking undermining the ETS’s credibility by changing already-legislated phase targets part-way through the phase itself.

### ***Option c: Early revision of the annual linear reduction factor***

In our view this option is the best of the six, since it would better address the underlying problems with the EU ETS outlined above. Firstly, a more ambitious emissions reduction trajectory would also help to buffet the carbon price from the combined effects of the recession and the impacts of overlapping policies, by giving the ETS more “work” to do. Secondly, it would also help to address to a certain extent the uncertainty over post-2020 allowance scarcity and could put ETS scarcity more in line the objectives of the 2050 Roadmap. On average, the linear factor should then be around 2.4-2.5 % per year between

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<sup>7</sup> Assuming a reduction target of 34 % for ETS sectors.

<sup>8</sup> It is already mentioned in the ETS directive and the EC issued a communication analysing the cost of this option in 2010 already Cf. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0265:FIN:en:PDF>



2005 and 2050<sup>9</sup> instead of 1.74 % in the current design. Finally, such a revision would reduce automatically free allocations of industrial sectors as the linear factor is taken into account in their definition, whereas a one-shot allowance retirement would likely only impact the amount of allowances earmarked for auction. As for the timing of such measure, the important point is in our opinion to review the linear factor now even if the change would come into effect from Phase 4.

#### ***Option d: Extension of the scope of the EU ETS to other sectors***

The main candidates for inclusion in the EU ETS would presumably be fuels consumption, thus allowing for the including of transport, household and other fuel energy use not currently covered by the Scheme. The inclusion of these fuels in the EU ETS could potentially act as a stabiliser to the EU ETS price, as demand for EUAs will be less dependent on industrial activity, with fewer carbon leakage issues. It could also in theory allow for a more harmonised taxation of the CO<sub>2</sub>-content of fuel energy throughout the EU by replacing different implicit carbon pricing in different energy taxes.

In practice, however, including transport and other primary fuels in the EU ETS is likely to face several problems and be extremely challenging to implement. Firstly, the economic sectors using these fuels (households and transport) are generally considered to face very high average abatement costs, are subject to numerous market failures that would blunt the ETS price signal in the absence of complementary policies. Moreover, realistically, these sectors – especially transport - are likely to require significant public intervention and policy coordination to drive large-scale abatement. This could therefore expose the EU ETS to a new level of regulatory risk. Secondly, EU-level carbon taxation via the EU ETS is also likely to face significant political challenges in being approved, since it would call into question domestic energy taxes and raise complex issues for Member States about energy poverty and household compensation.

In our view, this option does little to resolve the three structural weaknesses identified above, although it has other merits that could strengthen the EU ETS in the future. Moreover, given its complexity, it is perhaps desirable to ensure a soundly functioning EU ETS for the existing sectors as a first step.

#### ***Option e: Restrict access to international credits***

Existing provisions in the EU ETS Directive already strongly limit the use of international credits in phase 3 of the EU ETS and the evidence suggests that import limit – estimated at around 1.7 billion tCO<sub>2</sub>e cumulatively over 2008–2020 – is soon to be reached (Bellassen et al. 2012). Therefore, restricting access to credits at this time will do little to return scarcity to the EU ETS. In the longer term, the only restriction that needs to be placed on access to credits is that the importation of credits does not leave too little domestic abatement to be undertaken by the carbon price. Leaving too little abatement effort to the EU ETS after accounting for other policies and credit use increases the risk of extreme carbon price volatility in the event of demand shocks, as described above.

#### ***Option f: Discretionary price management mechanisms***

A discretionary price management mechanism will modify the nature of EU ETS which is a quantity-based instrument defined in relation to an environmental objective. Two specific mechanisms of price management are mentioned by the Commission's report:

**A price floor:** on the one hand, we agree that this measure, which has already been discussed in the definition of the Phase 3 framework, might give more certainty to low-carbon investors. The problem will then be how the price floor is defined and how it would be articulated with the EUA supply. A price floor could inter alia be put in place as a price reserve on the auction, thus reducing supply on the market if the price is low. An agreement between stakeholders and even Member States could be difficult to reach and the consensus

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<sup>9</sup> Assumes EU ETS sectors reduce emissions by 88-92% in 2050 compared to 2005 levels.

price floor might rather be modest and not high enough to effectively provide a support for investors.

**A permanent supply-adjustment mechanism:** this proposal echoes the observation made before that the EU ETS could be more resilient if it could adapt to adverse shocks in a shorter time frame. These shocks would have been much less severe with better policy coordination. We see this option as a possibility to clarify the governance of the Scheme in the event of extraordinary circumstances. Nevertheless, in building such a mechanism, the devil would be in the detail.

Such an adjustment mechanism must be both credible and transparent, particularly on the intervention criteria, timing and methods of intervention. The intervention criteria must be restricted, perhaps via a limited list of situations which could be considered as “disorderly functioning of the carbon market” e.g. significant changes in the emissions baseline used to develop ETS targets, technology shocks, *forces majeures*, etc. In our view, a low or high carbon price is not necessary by itself sufficient criteria to implement supply adjustments.

Timing of intervention must be well-known and able to be anticipated well in advance by the market. For example, the Commission or an independent body could be required to review every 5 years the calibration between the emissions baseline, the ETS cap, and the impact of overlapping policies and carbon credit availability.

If such a mechanism is put in place, the preferred instrument of intervention should be the linear reduction factor. We recommend that any such flexibility should be still subject to political approval to maintain the credibility of the long-term emissions cap.

**Table 1- Do these proposals respond to the identified issue?**

	Improves long-term scarcity signal?	Reduces the effect of policy interactions undermining the EUA price?	Clarifies governance of short-term interventions?
<b>A. Increasing the EU reduction target to 30% in 2020</b>	No	Yes	No
<b>B. Retiring a number of allowances in phase 3</b>	No	Yes	No
<b>C. Early revision of the annual linear reduction factor</b>	Yes	Yes	No
<b>D. Extension of the scope of the EU ETS to other sectors</b>	No	No	No
<b>E. Restrict access to international credits</b>	No	No	No
<b>F. Discretionary price management mechanisms</b>	No	Depends	Depends

Source: CDC Climat Research

## Conclusion: three solutions to three problems...

We believe that among the six options presented, option c which consists in an earlier revision of the annual linear reduction factor is the most desirable, as it is the only one which would directly address the uncertainty over post-2020 allowance scarcity. Ideally, it could be combined with a reinforcement of the ETS abatement objective, when post-2020 objectives will be discussed, in order to address the problem of the EU ETS as a “residual policy” in the EU Climate and Energy Package.

For the sake of regulatory stability, any structural change to be put in place from Phase 4, so as not to adversely affect the regulatory stability of the EU ETS.

In addition, we believe that to ensure the longer term durability and sound-functioning of the EU ETS, three points should be integrated into the current reflections on its future design:

- 1) **Adopt post-2020 emissions objectives** as soon as possible at the European level and clarify the contribution of the EU ETS sectors. This is necessary to reinforce confidence in the EU ETS and favor low-carbon investments.
- 2) **Give the EU ETS more work to do.** Build trust over time through better coordination in climate and energy policies. For instance, by setting more precise goals and expected timetables for the phasing out of overlapping policies, as well as assessments of their combined effects on the EU ETS in the case of demand shocks.
- 3) **Clarify the governance of possible future short-term interventions.** A permanent mechanism could be put in place to introduce flexibility in the current system. For example, the Commission or an independent body could be required to review the calibration between the emissions baseline, the ETS cap, and the impact of overlapping policies and carbon credit availability every 5 years and propose an adjustment of the linear factor if necessary. However, any such flexibility would need to be strictly constrained and subject to political approval to maintain the credibility of the long-term emissions cap trajectory, which would always need to be the pre-condition for any short-term flexibility.

## To find out more...

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