

Open consultation on Integrating Greenhouse Gas Removals in the UK Emissions Trading Scheme

Carbon Market Watch's input into the [UK ETS Authority's consultation on the integration of greenhouse gas removals \(GGRs\) in the UK ETS](#)

Carbon Market Watch strongly opposes the integration of greenhouse gas removals (GGRs) in the UK Emissions Trading Scheme (UK ETS). Limiting global warming to 1.5°C, as pursued by parties to the Paris Agreement including the UK, requires immediate and deep emissions reduction throughout the 2020s and, on top of that, additional atmospheric carbon removal to balance out the very last residual emissions and reach net negativity in the coming decades.

While maintaining a (decreasing) UK ETS gross cap would be the option preferred to limit mitigation deterrence, the UK ETS Authority should further consider establishing a separate incentive mechanism for GGRs.

GGRs are an inherently weaker form of mitigation than reducing emissions, and their sustainable, permanent supply will be limited. GGRs should not be a prerogative of ETS sectors, but should be considered as a supplement to help reach economy-wide climate neutrality and net-negativity. The Authority should support "indirect inclusion", through which the UK ETS financially supports GGR projects with its revenues.

Including GGRs in the UK system would complicate interactions with the EU ETS, where such integration, especially for land based sequestration, is currently not allowed and unlikely to become integrated in the future.

Consultation questions

Principles for policy design

1. Do you agree with the Authority's principles for policy design?

Maintaining the incentive to decarbonise should be the guiding principle of the UK ETS, ensuring covered emissions go to zero or near zero. The integration of carbon removals in the ETS, even if gradual, goes against this proposition, and is incompatible with the science, for a number of reasons.

First, emissions and removals are not equivalent. Equating emissions with removals by making them fully fungible not only causes mitigation deterrence, it also perpetuates the wrongful assumption that they have the same impact in the context of the climate crisis (Carbon Market Watch, [2021](#) and [2024](#)). Removals are an inherently weaker form of climate mitigation compared to emission reduction ([Ecologic, 2023](#)): the potential risks of leakage, technological constraints, energy, water and land requirements, as well as risks for biodiversity and local communities, make leaving carbon underground a safer option. In addition, once released into the atmosphere, CO₂ emissions have a permanent and often irreversible impact on the Earth's climate, ecosystems and human health. If done well, land-based carbon sequestration and permanent removals can help limit this damage, but they cannot undo them (if done badly, they can actually increase emissions).

Even if mitigation deterrence was resolved, the current UK ETS price signal would likely only incentivise cheaper, unsustainable removal options. More expensive - generally more sustainable and permanent - options would see no support. If ETS prices are too low to generate demand for more expensive or more permanent removals, there will be pressure to also integrate cheaper options such as (highly vulnerable) land based sequestration. This could then lead to an overreliance on removals, whereby the future residual emissions claimed by sectors would likely be higher than they otherwise would have been. Also, using UK emissions allowances (UKAs) and GGRs interchangeably may lead to a misallocation of a limited volume of sustainable and permanent removals that will also be needed to compensate for emissions from non-ETS sectors.

All in all, integrating GGRs into the ETS will not apply substantial pressure on reducing emissions and scaling sustainable removals over time.

If integration were to be pursued, both environmental and social integrity must be respected, to ensure a sustainable deployment of GGRs in line with social safeguards and within planetary boundaries.

Cap policy options

2. Do you agree the Authority should maintain the gross cap for initial integration of GGRs in the UK ETS (Option 2)? Please explain your answer.

Integrating removals in the ETS is wrong for the reasons summarised in question 1) above. At the very least If such an integration is allowed, the ETS gross cap must be maintained to ensure continued pressure on emissions.

The ETS should aim to make polluting expensive so that companies are left with no choice but to slash their emissions to zero. The price for residual emissions should be high enough to incentivise decarbonisation and reflect the external costs of carbon pollution.

The objective is to create further pressure on limiting residual emissions over time while preventing a regression of previously achieved emissions reductions.

Complementary non-market policies are required to prevent artificially low carbon prices or to give polluters an exemption, and to ensure that the necessary emission reductions are delivered in a timely manner while keeping the abatement costs at a reasonable level.

3. How can the UK ETS sustain demand for GGRs in the long-term, taking into account the consideration of setting a new cap (Option 3)?

The UK ETS can be used to support the deployment of GGRs in better ways than by including CDR in the ETS cap itself. The UK ETS should opt for an “indirect inclusion”, which means using ETS revenues to invest in GGRs. The Authority should also look further into setting up a separate system for removals, such as a Removals Trading Scheme ([Ecologic, 2023](#)).

Allowance design for GGRs

4. Do you agree that GGR allowances in the UK ETS should be issued ex-post (i.e. after the removal has taken place and been verified)? Please explain your answer.

Any units or allowances issued to GGR operators should be issued ex-post, i.e. only after the removal has happened and been verified; quantified using credible and conservative baselines; and assessed for additionality. Issuing allowances ex-ante could result in an oversupply of allowances backed by removals that might not eventually take place.

8. Should allowances from GGRs be differentiated from UKAs and, if so, how?

In principle, GGRs allowances and UKAs should not be interchangeable. Creating a differentiated label for the two types of allowances is helpful, but does not go far enough.

However, if the integration were to happen, we would support not only a separation between GGR allowances and UKAs, but also the setting of differentiated technology-specific GGR allowances, to provide transparency and accountability of the operator and the type of removal.

9. Do you think that differentiated GGR allowances would attract a higher price than existing emissions allowances and why? To what extent does this depend on the degree of differentiation (e.g. a generic GGR allowance versus a technology specific GGR allowance)?

In a ETS, the price will be a result of supply and demand. As long as allowances are "differentiated" but still interchangeable for compliance purposes, the price will be the same or very similar for all. This is also why a separate system for removals would be better suited to supporting their deployment, by avoiding a race to the bottom that is fuelled by undifferentiated pricing of removals on the ETS.

10. Will differentiated GGR allowances encourage non-compliance or non-trading entities to purchase these allowances?

It is possible that differentiation could be useful for voluntary corporate social responsibility purposes, but allowances volumes will likely be very limited compared to those under the UK ETS.

12. Do you agree that allowances should only be awarded to UK-based GGRs? We welcome views from all stakeholders including sector-specific considerations. Please explain your answer.

Weakening domestic efforts by relying on international GGRs is unacceptable. The UK Nationally Determined Contribution (NDC) should be economy-wide, and the country should avoid using international units to alleviate pressure on domestic transitions across all sectors. The UK ETS should follow the same logic and be focused on domestic emissions reductions and leveraged as an important instrument towards fulfilling the UK's NDC. At the same time, it is necessary for the UK government to provide climate finance internationally. The UK ETS could be used in this sense by channelling its revenues to the funding of international removal projects.

In addition, allowing UNFCCC international credits from mitigation projects under the EU ETS before 2021 proved unsuccessful, as it not only inflated the oversupply of emission allowances under the system but also boosted a market filled in large part by projects lacking social and environmental integrity ([Carbon Market Watch, 2024](#)).

Permanence of carbon storage

13. Do you agree with the proposed permanence framework of both a minimum storage period, a liability measure and a fungibility measure? Please explain your answer.

If integration were to happen, we agree that there is a need for a strict permanence framework based on a robust definition of permanence, that requires the setting of a credible minimum storage period, and on the use of liability measures for potential reversals.

Fungibility measures that equate different GGRs should be avoided. First, because these measures pose many challenges and are flawed, as explained in the answers to the questions below.

Second, if there is a lack of confidence in a GGR method's ability to effectively address climate change, merely reducing the number of issued allowances is an insufficient solution. Logically, under such circumstances, no allowances should be issued at all.

14. What minimum storage period duration should the Authority set for GGRs entering the UK ETS? Please explain your answer.

From a scientific perspective, to be considered permanent, the storage of carbon in a sink should be guaranteed for at least a duration equivalent to the lifetime of CO₂ in the atmosphere, which ranges from several centuries to millennia. Since guaranteeing permanent storage on geological time frames can prove impractical, the minimum storage duration for a removal process should be defined as keeping the carbon out of the atmosphere until humanity has had the time to contain the climate breakdown and deal with the associated impacts ([Carbon Market Watch, 2021](#)). The latter won't happen until at least two, or three centuries.

Similarly, temporary carbon storage only provides limited climate benefit if it means keeping CO₂ out of the atmosphere at least until the point at which planetary temperatures have peaked, which may not occur for 100 years or more ([Carbon Market Watch, 2023](#)).

15. How should the Authority manage potential reversal events from GGRs? Please consider the liability options outlined above, whether any options exist that have not been considered, and how the potential liability options could be used together or in sequence.

The Authority should start by referring to a robust definition of permanence and by attributing clear liability over the same time frames. The latter is neither clear to determine, nor realistic to guarantee, nor even perhaps possible to enforce - all of which reinforces that UKAs and GGRs should not be fungible, and the latter should be excluded from the ETS.

If an integration were to happen, purchasing and surrendering UKAs in the case of re-release is preferable compared to other options. However, it remains unrealistic to enforce liability for releases occurring 100 or 200 years in the future on parties that benefit from allowances awarded today.

Enabling operators to purchase negative emissions from a GGR outside the UK ETS should be avoided as it could create a loophole for 1) UK-based projects that are still not included in the system and do not fully comply with the definition of permanence, such as land-based sequestration; 2) international projects, decreasing pressure from the UK to reduce its domestic emissions.

16. Where should the liability for any re-release of stored emissions apply if there are multiple actors in the GGR value chain?

The burden of liability should lie among the actors that financially benefited from the removal activity. National jurisdictions and the general public should not be automatically considered as responsible for any reversals of storage.

17. Should the liability measure differ if the GGR is also subject to a fungibility measure? For example, if the reversal event was avoidable (i.e. within the control of the GGR operator) or unavoidable (i.e. due to factors outside of control of GGR operator).

The liability measure should, in principle, remain the same. Both fungibility measures suggested by the Authority - buffer pools and equivalence ratio - are not sufficient to ensure reversals are actually compensated.

GGR operators - or whoever is liable for the reversal - choose to enter the market knowing there will always be a risk (low or high) of reversals. It is imperative that strict liability rules are in place, and operators knowingly accept these conditions as part of their decision to engage in the market. However, given the time frame of 200-300 years that should be respected by GGRs to be considered permanent, it is unlikely that any liability mechanism could be considered either credible or enforceable. Over such a long duration, the stability of institutions, legal frameworks, and societal norms is highly uncertain. Therefore, discussions regarding liability in this context are largely theoretical.

18. Should the Authority use a buffer pool or equivalence ratio?

Buffer pools are by no means a foolproof method of impermanence risk management. They do not constitute a robust way of compensating for reversals of carbon storage ([Carbon Market Watch, 2023](#)).

There are several challenges linked to the use of buffer pools:

- Buffer pools do [not appropriately adjust](#) for varying risk contributions, often being too small to cover all potential losses.
- Future climate change effects are often not considered in the risk assessments.
- Flat contributions lead to adverse selection, penalising good projects while potentially incentivising risky ones.

- [Findings from Berkeley University Projects](#) demonstrate that REDD+ projects on the voluntary carbon market contribute credits to a buffer pool based on the estimated risk of reversal over a 100-year period. This timeframe is much lower than the estimated lifetime of CO₂ in the atmosphere, which is several centuries to millennia.

Similarly, the idea of equivalence ratios raises concerns about the adequacy of calculating equivalence based on somewhat arbitrary economic techniques that are heavily impacted by elements such as discount factors. The choice of discount factor will significantly impact the equivalence ratios applied, yet these factors are typically set based on economic and/or behavioural studies which are not necessarily applicable to the climate policy field. Using equivalence ratios leads to treating GHG emissions as an economic metric. This raises serious intergenerational equity questions, among other things. For example, why would an emission in 50 years time be less impactful than an emission in 30 years time? Applying these discount factors on climate-relevant timeframes, i.e. multiple centuries, leads to extreme discounting of the future, which negates the reality of the long lifetime of CO₂ in the atmosphere. Discount factors will give the impression that a reversal in 100 or 200 years has barely any impact on society, but that is a subjective view based on myopic economic techniques.

We strongly advise against setting up a system that relies on *economic* equivalence to determine permanence. Fungibility between reductions and removals should be based on physical estimates of the non-permanence risk - not on discounted economic estimates.

For the reasons outlined in the previous paragraphs, we believe that neither buffer pools nor equivalence ratios are adequate to guarantee permanence and equivalence. Removals that have a reversal risk are not physically equivalent to reductions, and there is no mechanism that can change this physical reality. We recommend establishing separate targets for removals that factor this difference into account, rather than manufacturing a physical reality that does not exist.

19. How could the Authority set the contribution rate for a buffer pool? Should this be a flat rate contribution across all applicable projects, or should this vary per project?

Flat contributions do not take into account the specific risks associated with different projects. High-risk projects, such as those in areas prone to wildfires or other natural

disasters, or with carbon storage in riskier geological formations (depleted hydrocarbon reservoirs with many wells drilled into them) contribute the same amount to the buffer pool as low-risk projects.

Low-risk projects end up being unfairly penalised because they contribute more to the buffer pool than their actual risk would warrant. On the contrary, high-risk projects are not sufficiently penalised for their higher likelihood of failure or reversal, therefore there is no real disincentive for pursuing risky projects.

Regardless of how the contribution is determined, it is important that it be reassessed regularly, both at the project level (re-assessing the project-specific risk) and at the mechanism level (re-assessing the robustness of the buffer). Stress testing of buffer pools should be carried out on a regular basis to ensure that they can sustain shocks.

20. Which factors should be considered when determining the appropriate contribution rate for a buffer pool?

Several factors should be considered to assess the reversal risk of a project. When it comes to REDD+ projects, risk factors are classified into three categories:

- Internal risk: which refers to risks that originate within the project (such as project finances and management).
- External risk: which refers to human-induced risks (such as certainty in land and resource ownership, community engagement and political risks).
- Natural risks: such as fires, pests, extreme weather events, geological risks, other natural risks, taking into account that many of these natural risk factors will be exacerbated by climate change over time.

Currently, natural risks are heavily underestimated compared to independent scientific analysis. All risk estimations should take into account the growing impacts of climate change, and should not be based only on historical data. Estimates should also be conservative - weighted to overestimate than underestimate risk - and lead to cautious contributions to the buffer pool.

21. How should the Authority decide which GGRs would be required to contribute to a buffer pool and at what level any threshold should be set for contributions?

As said above, we don't support the use of buffer pools. If that were to happen, a combination of both a standard rate and the results of an individual activity's risk assessment should be pursued so that the risk rating is stabilised by a baseline (standard rate) and further individualised depending on activity-specific risk factors

([Carbon Market Watch, 2023](#)). A standard minimum rate is important to help ensure that a minimal level of risk for all removal activities is incorporated into the rating, serving as a baseline. This baseline can then be adjusted upwards if the reversal risk measured at activity-level is higher than that baseline. A standard rate alone is not enough to account for the highly varied risks associated with different removal activities and geographies.

22. Should buffer pool contribution rates remain fixed over time or could they vary? If they vary how should this be assessed? For example, the Authority could require projects to contribute depending on an assessment of risk at each verification period, and this could change over time.

Buffer pool design, including contribution rates, must be informed by science and therefore reviewed regularly. There should also be regular stress testing of the buffer pool, e.g. potentially every 3 years, to check its integrity and resilience to different possible or plausible future reversal risk scenarios. There should also be annually published information about the composition of the buffer pool, including the share of credits by vintage, region and country, activity type, crediting methodology, and specific activity ([Carbon Market Watch, 2023](#)).

26. Should new ex-post woodland units generated in line with UK Woodland Carbon Code standards be considered for inclusion in the UK ETS? Please base your response on the evidence outlined around permanence, costs and wider land management impacts, and on the policy options outlined in the rest of this consultation.

While essential for nature restoration and biodiversity enhancement, land based sequestration cannot be considered a permanent removal for a number of reasons. First, the carbon stored in vegetation and soils can be easily released back into the atmosphere because of human or natural disturbances, including failing to upkeep started practices, thus long-term storage cannot be ensured. In addition, land based sequestration is vulnerable to the already severe impacts of the climate crisis, which can heavily affect the limited storage potential of the biosphere. This includes droughts, floods, pests and forest fires. The fact that, according to the Authority, “there is currently no evidence quantifying the potential impact of future changes on the permanence of carbon stored in woodlands” obliges us to apply the precautionary principle, and be mindful of the risks associated with climate change.

Furthermore, this type of sequestration creates a 'carbon debt' that takes an immeasurable but certainly long time to repay and deliver actual removals - time we do not have in the timeframe of the current climate breakdown. This also means that land based sequestration risks would be generating removal units before delivering the actual removals, which can take decades to centuries for certain land sector removals (e.g. forests and peatlands).

Finally, introducing woodland in the UK ETS, with a current WCC price of £25/tonne, would bring down the overall ETS price.

However, if implemented strategically, certain nature-based solutions offer significant environmental, social and economic benefits which are far more important than their carbon sequestration effect. Nature-based solutions should be incentivised to maximise their biodiversity, soil quality and water retention benefits, rather than focusing on an elusive and misleading carbon metric.

The correct procedure is through activity-based finance, which would support farmers and foresters using good practices, instead of trying to quantify carbon that cannot feasibly be measured and robustly monitored, and for which liability for reversals will place undue burden on landholders. Activity-based finance in these areas would not only lead to less burdensome Measurement, Reporting and Verification (MRV), simpler certification methodologies, lower risks for farmers and forests, but it would also allow for the continuous support of good practices. This would also reduce the risk of overestimating carbon 'removals' in these sectors and the potential for equating temporary parking of carbon with either permanent emissions or real removals. As an incentive, early adopters of good practices would be supported for uptaking environmentally positive activities.

28. If the Authority does include new ex-post woodland units generated under the UK Woodland Carbon Code in the UK ETS, should any measures be taken to mitigate potential social and cultural impacts? Please provide details of the impacts, including consideration of impacts on different land ownership models, and potential measures.

While we oppose the integration of woodland units in the UK ETS, the use of financial revenues from the auctioning of UK ETS allowances for the support of these projects remains necessary.

29. Do you agree with the Authority's assessment of peatland restoration?

We agree with the exclusion of restoration of peat due to current methodologies indicating that such activity represents a reduction of emissions rather than an overall removal. At present, drained peatlands represent a large source of CO₂ emissions, meaning peatlands must be rewetted and restored. Initial rewetting will lead to methane emissions, temporarily increasing climate warming, but given that methane molecules remain in the atmosphere for a short time before they are converted to CO₂, the climate cooling effect of rewetting will prevail in the long run. In contrast, the CO₂ molecules deriving from drained peatlands impact the atmosphere for many millennia, significantly contributing to warming. It is crucial to rewet as fast as possible to prevent the methane emissions from contributing to and amplifying global warming.

Moreover, carbon removal activities need to be measured conservatively and deliver unambiguous benefits for the climate. Yet, this cannot be guaranteed with current methodologies for peatlands, which are diverse and involve complicated GHG fluxes. Moreover, baselines and additionality are also extremely difficult to quantify.

In any case, land-based sequestration activities are inherently vulnerable to human and natural disturbances and, therefore, prone to reversal. For this reason, they are unreliable and do not qualify as permanent forms of carbon removal. As such, peat restoration should be viewed as a means to avoid emissions, increase biodiversity, and improve ecosystem health.

Pathways to integration

30. Do you agree with the Authority's assessment that, by maintaining the gross cap on emissions, additional controls could be used to target wider impacts but not mitigation deterrence?

As said in response to question 2, if GGRs are integrated in the UK ETS, we recognise that maintaining the gross cap on emissions would be the least detrimental option available. However, we call on the Authority to implement the use of demand controls, especially to limit the proportion of a participant's compliance obligation that can be used with GGRs and to grant GGRs only after a proportion of decarbonisation is demonstrated, or credible decarbonisation plan is submitted.

31. To what extent will GGR operators seek to sell into voluntary markets and will this provide a control on GGR supply entering the UK ETS?

No assumptions should be made regarding the longevity or overall market size of the voluntary carbon market (VCM).

32. Should the Authority consider the use of demand controls to target any impacts other than mitigation deterrence?

Yes. If full integration is pursued - which we believe would be wrongheaded for the reasons explained in the answers to questions 1 and 2 - the amount of GGR allowances used needs to be limited at the level of the ETS installation, and companies should be able to demonstrate a proportion of decarbonisation happened or is credibly planned before being granted GGRs allowances.

Timing of integration

34. What would be the optimal timing for GGRs to be integrated into the UK ETS, taking into account the considerations set out above? Please explain your answer with reference to impacts on both the UK ETS and GGR deployment.

It is important to consider the implications that integrating GGRs into the UK ETS would have with regards to coherence and compatibility between the UK and EU ETS. For the time being, such integration has not been implemented in the EU and it is unlikely that it will occur in the future, particularly with respect to forest-based CDR. Regulatory alignment that upholds environmental integrity on both sides of the Channel will be crucial for fostering business stability and investor predictability. Any divergence between the UK and EU systems would complicate future interactions between the two.

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